

Taking
Australia's
IT Pulse:
**Trends, Challenges
& Opportunities
in 2019**

20
19

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About this report

In order to gather data on the opinions held and challenges faced by those currently working within the Australian IT industry, we surveyed over 700 IT professionals across Australia in November 2018. The results were reviewed and analysed by a panel of DDLS experts in order to identify any emerging trends and opportunities, and present potential solutions.

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Introduction

2018 marked another twelve months of tech-driven change and digital disruption - both domestically and worldwide. As its sphere ever-widens and increases in complexity, the IT industry continues to operate in a state of flux. From the phenomenal pace at which AI technology is growing and the increasing threat of cybercrime through to the rapidly evolving IT job market, no aspect of the sector remains untouched by change.

But what do these changes mean for those working in the sector day-to-day? How will Australian IT professionals respond to these challenges and opportunities in the year ahead? This report provides a snapshot of the opinions, concerns and predictions of a wide cross-section of IT workers, together with recommendations on how best to leverage the trends that will dominate in 2019 and beyond.

Introduction

Our DDLs Panel

**Jon Lang**

CEO

Jon has a long history of working in the education management and IT industries. His ability to understand the capability that technology has to power, guide and transform organisations to solve business issues make him a strong leader in his field.

**Sue Webb**

BUSINESS ANALYSIS AND PROCESS EXPERT

Sue is passionate about Business Analysis and Business Intelligence and how those two disciplines can come together to deliver business value and facilitate better strategic and tactical decisions. This combination enables her to take a very business-focused view of technology, the value it delivers and how to deploy it.

**Michael Clark**

TECHNOLOGY EXPERT

Having spent the better part of the last two decades in technology, Michael's fascination with change and technological innovation is stronger than ever. His passion revolves around The Internet of Things and Big Data.

**Terry Griffin**

CYBERSECURITY EXPERT

A technology expert specialising in cybersecurity, Terry has been in the IT education field for 17 years and is known as a Microsoft, VMWare and Citrix evangelist. Terry is also an AC-Council Certified Ethical Hacker and Certified Network Defender.

Section
01 /03

Challenges in the year ahead

“Doing enough to stay ahead of the curve across a number of key areas will be an ongoing concern for IT professionals in 2019.”

The top priority for IT workers this year will be ensuring their own/their team's skills are up-to-date, with over two thirds of respondents (68%) predicting that this will be their biggest challenge. Staying on top of new technologies and developments in the industry and protecting their organisation against cybercrime and data breaches round out the top three.

Depending on their role, recruitment and retention will be a preoccupation for many. Overall, around 1 in 5 respondents expressed concerns about retaining staff in an increasingly competitive market, while more than 1 in 4 expect recruiting staff with the right mix of skills to be difficult.

Not surprisingly, those directly responsible for hiring are the most concerned by this issue: 59% of IT Managers identified recruitment as a top 3 issue while 39% marked staff retention as another red flag.

Budget and resource constraints was still listed as a factor for some, but the majority of respondents didn't list this as a major concern, suggesting a subtle shift in priorities.

IT Professionals' Top 3 Concerns

What do you expect to be your biggest challenges in the year ahead?
773 out of 773 people answered this multiple-choice question.

68%

Ensuring my skills/the skills of my team are up-to-date

66%

Staying on top of new technologies and developments in IT

52%

Protecting business systems against cybercrime and data breaches

Other Concerns:

39%

Managing budget and resource constraints

28%

Recruiting staff with the right skill set

23%

Complying with regulatory changes

22%

Retaining staff in an increasingly competitive market

Section
01 /03

DDLS Analysis

1.1 **Our shifting priorities and the currency of time.**

“Five years ago, the biggest roadblocks to training were money and time, in that order. Now, the balance has well and truly shifted.”

Michael Clark,
DDLS

Budget and time have always been the biggest barriers to upskilling and ensuring internal IT training needs are being met - but, historically, budget was the key deciding factor. Now, as reflected in this research, the balance has shifted, making time an equally precious resource in modern IT departments.

Businesses' increased reliance on IT systems to manage and implement an ever-growing range of business-critical functions makes the IT manager an indispensable staff member, particularly within organisations that do not have an IT support team but manage with a single individual.

Moreover, Australian employers, operating as they do within one of the most expensive workforces in the world, expect a high return on their investment. In such a pressured environment, justifying extended periods of time out of the office to ensure staff skills are up-to-date is becoming more and more difficult.

“Anecdotally-speaking, it's not uncommon for IT teams to have unallocated budget leftover at the end of the financial year because they lacked the opportunity to make use of it.”

Michael Clark,
DDLS

Factors influencing recruitment and retention



Changing Workforce Demographics



Growth in Poaching



Digital Transformation



Access to Training



Competition From Big Tech



Growth In Contracting



Fewer IT Graduates

1.2

Recruitment, retention and the workforce of the future.

The future implications of scaling back training are significant, particularly when viewed through the lens of recruitment and retention. DDLS Technology Expert, Michael Clark, explains: “In IT, skills gaps become evident very quickly, and headhunting as a recruitment technique is very much on the rise. Similarly, the visibility of and access to candidates through LinkedIn makes poaching easier than ever.

“In this highly competitive job market, organisations who don't invest sufficiently in staff training are at the greatest risk of attrition and IT Managers are right to be concerned. Providing staff with the tools and skills to be able to progress their careers and do their jobs properly is central to engendering loyalty and ensuring job satisfaction.”

The changing demographic of the workforce will further exacerbate this situation in the years to come. The age profile of IT workers is already changing, with Millennial and Generation Z workers (those born after 1981) accounting for over a third of all people employed in the IT industry globally in 2016¹. This new generation, largely comprised of job-hopping digital natives, not only expect, but demand fulfilment from their careers and are motivated by the twin drivers of empowerment and enablement.

What's more, their expectations of technology are higher than their older cohorts; Millennials and Gen Z-ers are less likely to remain in an organisation that still operates on a legacy system, and will naturally gravitate towards workplaces that have already undergone a digital transformation.

“Retiring Baby Boomers are being replaced by Millennials, who are driven by empowerment and enablement. When those two factors are impacted, they will look elsewhere.”

Michael Clark,
DDLS

DDLS Analysis

1.2 cont.

The evolution of learning

“Micro-learning” could well become the dominant learning method of the future and help to mitigate the resourcing challenge.”

Michael Clark,
DDLS

The changing nature of how we learn should also be considered when looking at future training and retention strategies - not just when catering to these younger demographics, but within the context of the workforce as a whole. The ubiquity of smartphones, the practice of double-screening and the constant digital distractions all employees face on a daily basis have led to shorter attention spans and less time than ever to consume education.

New training techniques such as “micro-learning”, in which students are served small pieces of focused, bite-sized content in order to accomplish a specific learning outcome, could well become the dominant learning method of the future and may help to mitigate the resourcing challenge that prevents so many IT teams from meeting their training objectives.

Other factors which will continue to influence recruitment and retention in 2019 and beyond include:

- **Increased move towards independent contracting and consulting roles.** The trend for senior IT professionals to reposition themselves as guns for hire will continue, further restricting the pool of permanent candidates while at the same time strengthening the market for outsourcing options.
- **Declining participation in tertiary IT education.** A recent Government report revealed that enrolments in STEM subjects has now hit a twenty year low. As fewer students choose to enrol on IT-related degree courses, the number of graduates coming through the ranks will inevitably continue to shrink and the job market will tighten further.
- **Competition from big tech.** IT professionals are already being tempted away from other industries by the promises offered by big tech companies. Here, staff typically have the opportunity to work on more challenging projects, while all the systems they need to do their job properly are in place.

Solutions & Opportunities

1.3

- **A more flexible approach to training.** Resourcing issues could be eased by the adoption of a hybrid training model in which 2-3 days of a week-long course are completed in working hours, with the remainder conducted in students' own time via e-learning.
- **Increase upskilling through regular, smaller learning interventions.** For many organisations, training typically happens every two to three years - often because of the time investment required. An L&D strategy that incorporates micro-learning techniques would deliver highly-targeted training at the moment it's most needed, while minimising time out of the office.
- **Offer a seamless digital experience.** In a competitive job market, ensuring IT staff are fully equipped to do their job properly and with minimal frustrations is essential. Digital transformation and staff retention go hand-in-hand; without one, you risk the other.
- **Explore ways to engender greater loyalty.** While the average length of tenure is short and getting shorter, there is still much businesses can learn about staff engagement from big tech companies. Finding ways to empower your team, providing them with creative projects, and encouraging a more flexible working culture are all valid ways to improve loyalty and keep your best people happy.

Section
02 /03

Predicting 2019's Dominant Trends

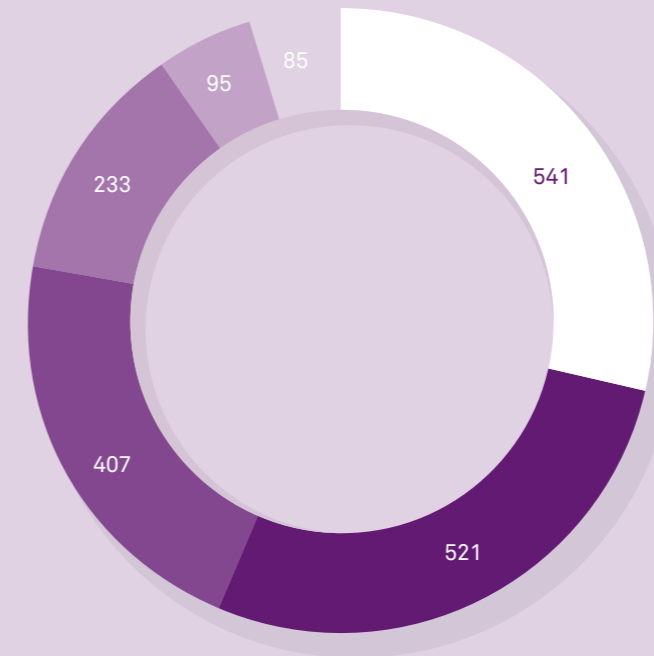
2.1

Issues related to cybercrime and cloud solutions will dominate the agenda for IT workers in 2019. Unsurprisingly, 70% of respondents expect cybersecurity and data breaches to remain a big focus for the industry, while over two thirds also expect cloud and hybrid cloud solutions to become an increasingly hot topic.

This is reflected by organisations' training priorities: 63% of IT workers say cloud courses will be their main focus in 2019, while 46% stated their intention to build their cybersecurity credentials.

Also in the top 3 trends for next year is growth in the AI and automation space; more than half of IT professionals expect to see this rise up the news agenda.

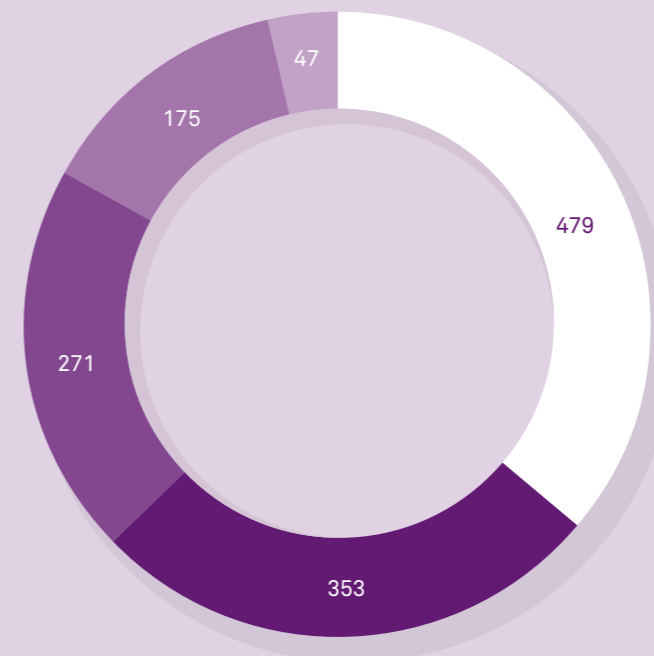
63% of IT workers say cloud courses will be their main focus this year.



Which topics or trends do you expect will dominate the IT agenda in 2019?

- Data breaches and cybersecurity concerns — 541
- Increased uptake of cloud and hybrid cloud solutions —521
- Implications of AI and automation—407
- Tightening of online privacy regulations—233
- Growing market dominance/oligopoly of global tech companies—95
- Maturation of the cryptocurrency market — 85

Figure 2:
2019's dominant trends
773 out of 773 people answered this question.



Given your expectations for the year ahead, what are your training priorities for 2019?

- Cloud courses—479
- Cybersecurity courses—353
- Process courses—271
- Networking courses—175
- Other—47

Figure 3:
2019 training priorities
773 out of 773 people answered this question.

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DDLS Analysis

2.2

Evolving our approach to cybersecurity

As cybercrime and data breaches continue to make global headlines, so too are Australian businesses bolstering their expertise in this space. Over two thirds of those surveyed confirmed that their inhouse teams had experience in cybersecurity, while a further 17% said they were either intending to build their inhouse expertise in the year ahead or already recruiting to fill the skills gap. However, there is still a proportion of IT departments with no internal cybersecurity expertise and no plans to recruit or upskill in the immediate future (15%).

“The Australian cybersecurity sector will triple in size by 2026 to become a \$6 billion industry.”

2018 AustCyber report

Jon Lang, CEO of DDLS, says we can expect the demand for cybersecurity skills to grow at an increasingly rapid pace in the year ahead: “Cybersecurity is a very complex landscape, and those who specialise in it are among the highest paid consultants in the industry. A recent AustCyber Report forecasts that the sector will triple in size by 2026 to become a \$6 billion industry.

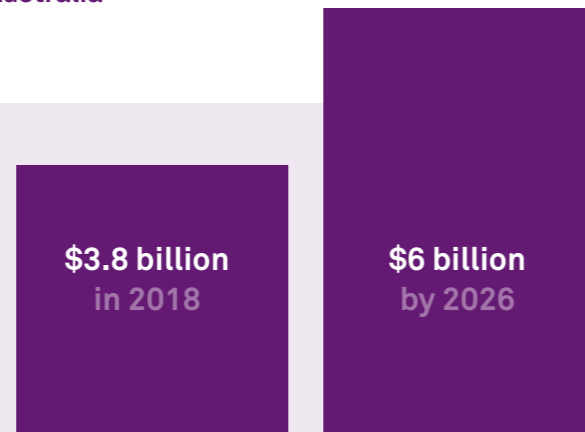
“Even sooner than that, we anticipate that every large business will have a digital security specialist on their payroll - although most smaller businesses will need to find alternative, more cost-efficient solutions. As such, we should expect to see more and more smaller organisations meet their security needs by engaging external consultants on a subscription-based model, rather than recruiting for full-time inhouse roles.”

“Within the next couple of years, every large business will have a digital security specialist on their payroll.” Jon Lang, DDLS

“By 2027 Australia will need 11,000 more cybersecurity specialists.”

2018 Emerging Jobs Report Australia

Value of Australia's Cybersecurity Industry



2.2 cont.

“Cybersecurity is everyone’s responsibility and processes which promote this mindset will become increasingly commonplace.”

Terry Griffin, DDLS

Of course, cybersecurity is not the exclusive domain of the IT team: everyone in the organisation needs to take responsibility and have some understanding of basic security measures. As senior management become more cognisant of this fact, Michael Clark predicts security will shift from individual responsibility to encompass all company staff, regardless of their role: “You wouldn’t hand a new staff member the keys to a company vehicle without basic training, yet new staff everyday are issued keys to the network via a user name and password.”

“As we within the industry are all too aware, human interaction remains the single greatest enabler to bad actors in the cybersecurity space. The 2016 Enterprise Phishing Susceptibility and Resiliency Report found that, globally, up to 91% of attacks on enterprise networks began with a spear phishing email. And while one would hope this figure has improved in the last 12 months, the reality is that wherever there is human interaction, there will always be errors.

“The current approach to cybersecurity training focuses on educating IT specialists in how to identify threats through ethical hacking, but with the practice of phishing on the rise, I predict that businesses will need to move towards mass user adoption and training the entire organisation in basic security practices.”

Similarly, DDLS cybersecurity expert Terry Griffin advocates the need for a complete cultural shift in which everyone takes responsibility for cybersecurity. “The issue of SQL injection (which typically occurs when an unsuspecting user is asked for input, like their user name/ user id) and the associated exfiltration of data has not gone away - in fact, it’s increasing, due to a lack of testing and knowledge of the problem. According to The Open Web Application Security Project (OWASP), it is the most common data exfiltration method used by hackers - but it can be stopped by training, secure coding and testing.

“Most within the IT industry have heard of DevOps: the integration of developer (programmer) and operations (administrator) teams who work together along with automation to produce working code in a shorter amount of time by testing each software module in a test environment which mirrors the productions system. DevSecOps is an extension of the DevOps concept, where each software module is tested for security when it is built, rather than subjecting a huge and complex system to a security audit after deployment, by which time the system may have already been hacked.

“DevSecOps embraces cross-team collaboration, allows for faster responses and decision-making and champions this cultural shift towards shared responsibility for network security. I predict that this discipline will become increasingly common in the years ahead, and already has a large following among those who are in the know.”

Australian Businesses' Cybersecurity Expertise



2.3

AI and reshaping the IT workforce

AI is developing much faster than experts had previously predicted, as indicated by the recent announcement from DeepMind that its game-playing AI, AlphaZero, has beaten the world's best chess, shogi and Go players for the first time. As AI technology becomes more sophisticated, so too are businesses becoming more adept at analysing and putting to use the complex data AI systems are gathering on their behalf.

“Consultants who can help businesses interpret and do more with their data will become increasingly sought after.”

Sue Webb, DDLs

DDLs business analysis and process expert Sue Webb foresees a continued shift in the type of IT roles on offer in 2019 and beyond as AI becomes more embedded in the way we do business: “Cloud computing has been critical to advancing AI and machine learning as every business now has access to a supercomputer capable of performing this level of number crunching (previously, very few businesses could afford that infrastructure themselves). But if data is the new oil, it still needs to be brought to the surface and refined before it can be of use.

“Data scientists and business analysts have the skills to do exactly that. Consultants who can help businesses interpret and do more with their data will become increasingly sought after and salaries will rise in line with demand - but don't assume that means more IT jobs will be created. Rather, individuals whose roles are being replaced by automation and AI will retrain and expand their skills set to remain relevant.”

“Machine learning is a threat in the sense that my job can probably be automated, but I imagine that my job will simply change. As long as I personally stay adaptable, it's an opportunity.”

Survey respondent

A global survey by Accenture found that eight in ten Australian executives expect to see AI working alongside humans as a co-worker, collaborator and trusted advisor - all within the next two years. However, there is still a long way to go and much work that needs to be done before we reach that point.

Sue Webb continues: “The advances the Big 5 are making in AI and machine learning have precipitated a rush to invest in the technology as businesses fear the prospect of being left behind. But when this race to be in market takes precedence over all else, it rarely leads to success. The same Accenture report predicted that, by 2022, firms that adopt AI can boost their revenues by up to 38 per cent. This could well be the case, but the technology must be aligned with the business' strategic direction and be used to help to solve a real business challenge.”

Solutions and opportunities

2.4

- **Implement basic, company-wide cybersecurity training for smaller teams.** Where inhouse expertise is cost-prohibitive, businesses need to do more to ensure the entire organisation is familiar with basic cybersecurity practices and aware of the risks.
- **A more nimble and cooperative approach to cybersecurity.** Businesses must recognise that cybersecurity is not the responsibility of a single person or department. Moving away from the traditional, slower-paced approach to security in favour of a more collaborative, iterative process in which developers, security and operations teams work hand-in-glove has the potential to significantly improve security across the organisation.
- **A more considered and rigorous approach to AI adoption.** Despite the AI goldrush, businesses should only consider investing in AI if and when there is a tangible goal or problem to solve.

Section
03 /03

IT's growing sphere of influence

3.1

With organisations becoming more reliant on technology to create efficiencies, perform business-critical functions and enhance financial performance, perceptions of the IT industry are changing. Similarly, the personalisation of IT and its ubiquity in our daily lives is contributing to a new understanding of - and respect for - the industry.

This sentiment is borne out by the survey results, in which the majority of IT professionals agreed that IT is becoming increasingly influential, and will become even more so in the year ahead.

However, for a minority of IT workers, the changes in IT's sphere of influence have yet to materialise. 1 in 10 say their department is still seen more as a business support function, and as such is not involved in their organisation's leadership and direction.

“Changing perceptions are being driven by the increasing uptake of IT in daily life and a more IT-savvy generation coming into the workforce. This makes my work easier as IT services are embedded in their minds as fundamental.”

Survey respondent.

Factors influencing changing perceptions:



Personalisation of IT



Growth in Cybercrime



Adoption of Collaborative Teams & Processes

Do IT professionals expect IT to become more influential in 2019?

767 out of 773 people answered this question.

54%

Yes, perceptions are already improving

30%

Possibly - but there are still challenges to overcome

13%

No - IT's influence within my organisation will not expand



More CTOs on Boards



Digital Disruption & Transformation



Democratisation of Data

Section 03 /03

DDLs Analysis

3.1

Data as a business-enabling function

“IT has moved out of the realm of business support to become truly enabling, adding value and insights that will expand and grow the business.”

Sue Webb, DDLs

The democratisation of data has played a leading role in bringing IT functions out from back-of-house and into the spotlight, and knowledge-sharing has become a powerful business-enabling function.

Not surprisingly, both vendors and senior management teams have been quick to take advantage of this. Business analytics solutions like Microsoft Power BI are revolutionising how businesses use data by making information accessible to every staff member, thereby improving individuals' analysis and decision-making capabilities.

Sue Webb is confident that, as the value of data increases, IT's star will continue to rise. “Now that we can put powerful data manipulation tools on the desktop of every user, IT has moved out of the realm of business support to become truly enabling, adding value and insights that will expand and grow the business.”

This correlates with the fact that Business Analysts (BAs) are the most optimistic about IT's growing sphere of influence: 63% of BAs say perceptions are already changing. By contrast, less than half of IT Managers believed that to be the case, while a third of IT Managers believe there are still challenges to overcome.

Sue Webb continues: “The role of the Business Analyst has evolved in recent years. BAs are now less task-driven and more focused on strategy, so it makes sense that BAs might experience more positive interactions with the wider business than some of their colleagues. However, for IT to truly secure its seat at the table, IT professionals from all disciplines need to work together to portray the industry in a positive light and champion its contribution to business growth.”

3.2

Proactivity and unlearning the past

Currently, IT's influence is being driven, not from within IT departments themselves, but by senior management and industry. As technologies develop, software companies are proactively pitching their products to senior management, who then delegate implementation to their IT teams.

Michael Clark hopes to see the balance shift as some of the historical barriers to integration are removed and IT teams take more ownership of their organisation's direction. “Historically, IT workers' interactions with the wider business were often negative; they centred around fixing problems and fighting fires. That's now starting to change.

3.2 cont.

“With the growing adoption of cross-functional teams and processes like ITIL and DevOps, IT professionals are coming out from behind their desks and working collaboratively with marketing, finance, HR and other functions to solve business challenges. As IT becomes more deeply embedded within the wider business, IT teams will feel more valued and empowered to proactively drive change from within, instead of taking a more reactive approach.”

3.3

Disruption is heralding positive change

Despite the widespread use of the word ‘disruption’ as a negative, IT's growing influence owes much to the power of disruptive forces. Jon Lang explains: “Over the past five years, digital disruption has had a direct impact on the number of CTOs or CIOs appointed to exec boards, transforming the role and its scope.

“Today's CTO must not only be fully cognisant of new technologies and platforms, he or she is now responsible for helping to shape and define their organisation's business strategy. This is a world away from what this role entailed less than a decade ago, and we can only assume that the influence of Chief Technology Officers will continue to expand as tech becomes a great business enabler.”

“The influence of CTOs will continue to expand as tech becomes a greater business enabler.”

Jon Lang, DDLs

Sue Webb adds: “Disruption has also heralded positive change among industries that have been most heavily impacted. After a period of adjustment, those sectors are now setting the benchmark for how to use IT as a process improvement and revenue-generating function. From finance and insurance through to travel, industries which have embraced digital transformation out of necessity are now reaping the rewards.”

Solutions and Opportunities

3.4

- **Champion proactivity and upward management.** Rather than being largely reactive, an opportunity exists at this point in time for IT professionals to drive the uptake of new tech, processes and platforms from within. A natural consequence of IT staff having greater control and visibility within their organisations will be an uplift in job satisfaction and increasingly positive and empowering internal cultures.
- **Create environments which encourage collaboration.** Where possible, IT teams should take the opportunity to step outside of their silos and collaborate with other parts of the business - not only to better solve business challenges but to build mutually beneficial, long term partnerships with other departments and colleagues.
- **Harness the power of disruption and learn from others who have done the same.** View disruption as an opportunity, not a threat, and encourage the rest of your business to do the same. As we move beyond 2019, we can all learn lessons from industries who have experienced its full force and have emerged better and stronger.

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