CCC Global Digital Skills Survey

2019

CLOUD CREDENTIAL COUNCIL

Global Digital Skills Survey 2019

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Digital is the way forward.

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Executive summary

In today's world, large, medium, and small organizations all rely on some form of IT and technology to meet the goals of their business and the needs of their customers. Strategic choices are made and plans executed daily.

Maintaining competitive advantage is a common strategic approach taken by many organizations. In turn, this should lead to a return of profits to shareholders. However, is a strategy based on maintaining competitive advantage enough to survive during this digital revolution? We don't think so!

Should an organization continue to focus on returning maximum profits to their shareholder in the short-term at the expense of investing in new ideas, fostering innovation and ultimately finding new business models underpinned by the latest in digital technology?

Should organizations and individuals do more to understand the current wave of change, to adapt and to innovate their business models supported by digital technologies? Yes, they should, and we know so!

Over the past eight years, the Cloud Credential Council (CCC) has brought a portfolio of vendor-neutral accreditations to the market. These accreditations cover the domains of Cloud, Big Data, Internet of Things (IoT) and Blockchain. CCC education and training programs have been developed in conjunction with leading industry experts in their field.

We continue to receive regular feedback and updates regarding changes in the industry through our cohort of experts, authors, training partners, associates, etc. We use this feedback to continue to evolve our portfolio.

In 2019, the CCC set out to capture an initial view of the digital landscape from those who are right at the coal-face of all things digital – IT

professionals and organizations, across the globe.

The CCC Global Digital Skills Survey 2019 identifies three critical and eight key findings. Our analysis covers cultural, individual, and organizational readiness for the changes which are being brought about through the impact of digital.

IT professionals need to upskill to deliver value from digital technologies. IT organizations need their staff to upskill to help them maintain their competitive edge and hopefully identify ways to increase their competitive advantage.

Focusing on technology alone will not deliver digital success, digital innovation, or digital value - it will only deliver new technology, not business results. Upskill your organization with the appropriate range of digital skills which are business and technology focused.

I hope that this report helps you, the reader, IT professionals, and organizations succeed with all your digital endeavors.

Furthermore, I would also like to acknowledge with much appreciation the crucial role of this year's sponsors: Consuldesk, Cranford Group, DASA, Digicomp, GKK Consultants, Glenfis, Global Knowledge, ITpreneurs, itSMF UK, KandF, STS, Torque IT, UnistarPRO, Valnaos, and Yayati.

Mark O'Loughlin
Managing Director
Cloud Credential Council

Critical findings

Our overall industry analysis conducted throughout the first six months of 2019 has identified three critical findings, which are presented below.

In addition, eight key findings from our 2019 Digital Skills Survey are detailed throughout the remainder of this report.

1. Organizations and IT professionals don't know what they don't know.
2. Organizations require staff to have the ability to acquire skills quickly as opposed to having skills.
3. The sequence for digital success is People before Technology – People First, Technology Second.

Organizations and IT professionals don't know what they don't know

Ask ten people what digital is and you will receive back ten different answers. Ask ten people for a good working definition of digital and they will struggle to provide a common definition or theme.

It is very clear from our overall research that many organizations across the globe are unaware of the significant gap they have in understanding what digital really is, what digital can deliver, and how to achieve success from digital strategies and the adoption of digital technologies.

Organizations require staff to have the ability to acquire skills quickly as opposed to having skills

In our discussions with the C-suite, HR departments, organizational leaders, recruitment specialists and analysts, the ability to acquire skills quickly is a common sought-after trait. The reason is simple. The current wave of IT and Digital technologies are changing at an unprecedented rate and will continue to change for the foreseeable future. Therefore, the ability for an individual to learn and acquire new skills and to expand their digital capabilities as digital technologies change and are introduced is considered more important than what that individual may have learned to do in the past or what knowledge they had acquired to-date.

It should be noted that the ability to acquire new skills quickly is not dependent on age. The older working cohort should be as capable as their younger counterparts in having the ability to acquire new skills. People's ability, or inability, to upskill, re-learn and re-educate is generally seen as an individual trait, not a demographic trait.

The sequence for digital success is People before Technology -- People first, Technology second

Over the last few years, many organizations have pursued a 'Cloud First' strategy. Many organizations continue to do so. Many organizations have also embarked on a 'Digital Transformation' program primarily focused on adopting the latest in digital technologies in order to find a competitive advantage, deliver value to customers and to find further cost savings and efficiencies.

However, a large number of these strategies and endeavors have focused more heavily on the technology and less on the people aspect. In such cases, organizations end up with the latest in technology, yet the people they depend on to exploit all this new technology, are found lacking essential skills and capabilities needed to deliver value or even use digital technology in any meaningful way.

New technologies, including all things of a digital nature, will lead to new levels of task automation. This happens with every new technology event. This current wave of digital disruption, digital transformation, and digital optimization will see many current manual tasks becoming automated. It is expected that some current roles and jobs will become displaced or even obsolete. However, that does not mean the individual has to become displaced or obsolete. The opportunity today is for individuals and organizations to upskill, re-skill and re-train for the new jobs and roles which develop as a result of all this digital change. The power should be with the people, if the people are (1) willing, (2) capable and driven to change, and (3) can learn and adapt to today's changing workplace.

If you want to quickly test these findings at a personal, or organizational level, look to the next section Helpful Resources for two very useful, quick and powerful tools.

Helpful resources

The CCC continues to provide a range of free tools and resources for both individual IT professionals and organizations to use

CCC tools are designed to be useful, practical, relevant and easy to take. The free resources presented below are quick and easy to complete, providing relevant and useful information. We encourage all readers of this report to use the free resources which we make publicly available online.

Cloud Adoption Readiness Assessment

The Cloud Credential Council (CCC) teamed up with the Innovation Value Institute (IVI) to develop a free to use cloud adoption readiness assessment.

Based on IVI cloud assessment capability and mapped to the CCC's Professional Cloud Service Manager (PCSM) syllabus, the assessment will allow you to assess your organization's readiness to adopt cloud technologies and provide recommendations around capability and competence improvements.

Cloud Adoption Readiness Scan

Cloud Readiness Scan

The CCC Cloud Readiness Scan assesses individuals readiness to work effectively with cloud computing and cloud based services.

By answering just twenty-four short questions, the CCC Cloud Readiness Scan will informs individual how they map against each of the twelve competence levels relevant to professionals working with cloud.

Cloud Readiness Scan

Additional free resources from the CCC are available through our website.

Who we surveyed

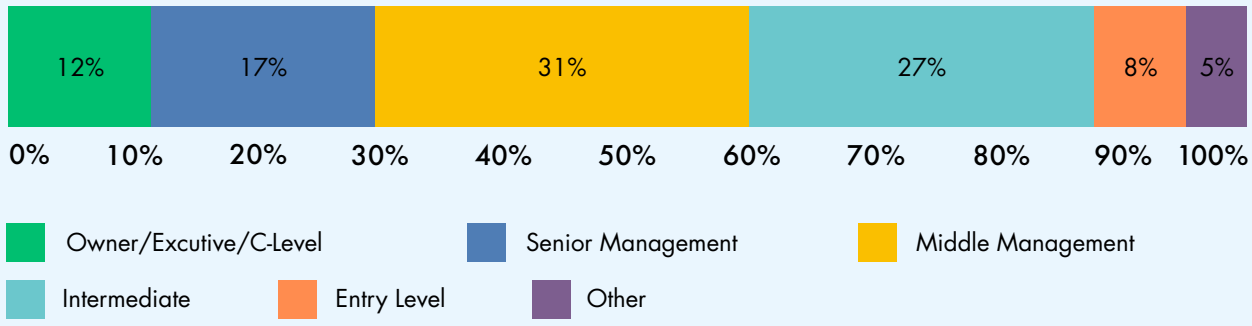
As this is our first Global Digital Skills Survey, participation was by invitation and referral. To include as wide a demographic as possible, we asked our global partners to participate and refer the survey to their extensive network of clients, organizations and end-users. In addition, we invited individuals from global organizations to provide their views.

We also analysed the views, opinions and feedback which we received direct from CCC classroom discussions and from our extensive pool of global training partners. This feedback has been instrumental in the findings presented throughout this report.

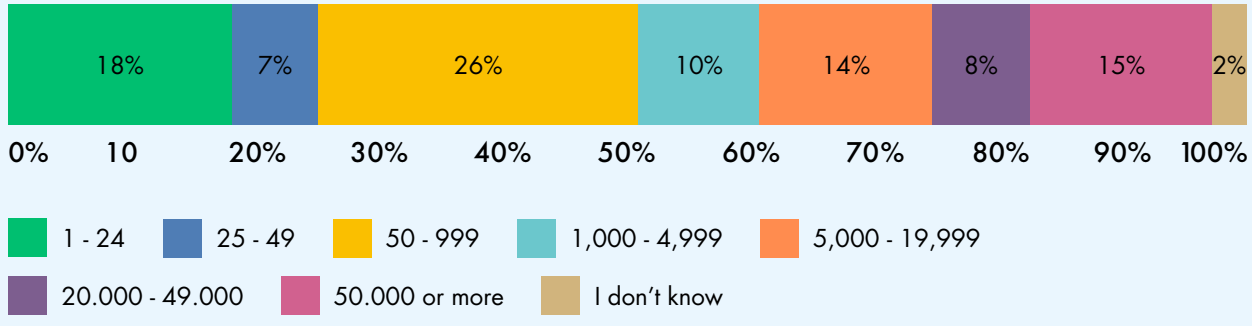
We are pleased to see that every continent provided a significant number of responders and feedback channels, making this a representative report.

Already planning for next years' report, we will widen the target participation group further. We welcome you to get in touch with us and register your interest to participate, sponsor and support our next global survey.

Job level / Role in organization



Number of employees in the Organization



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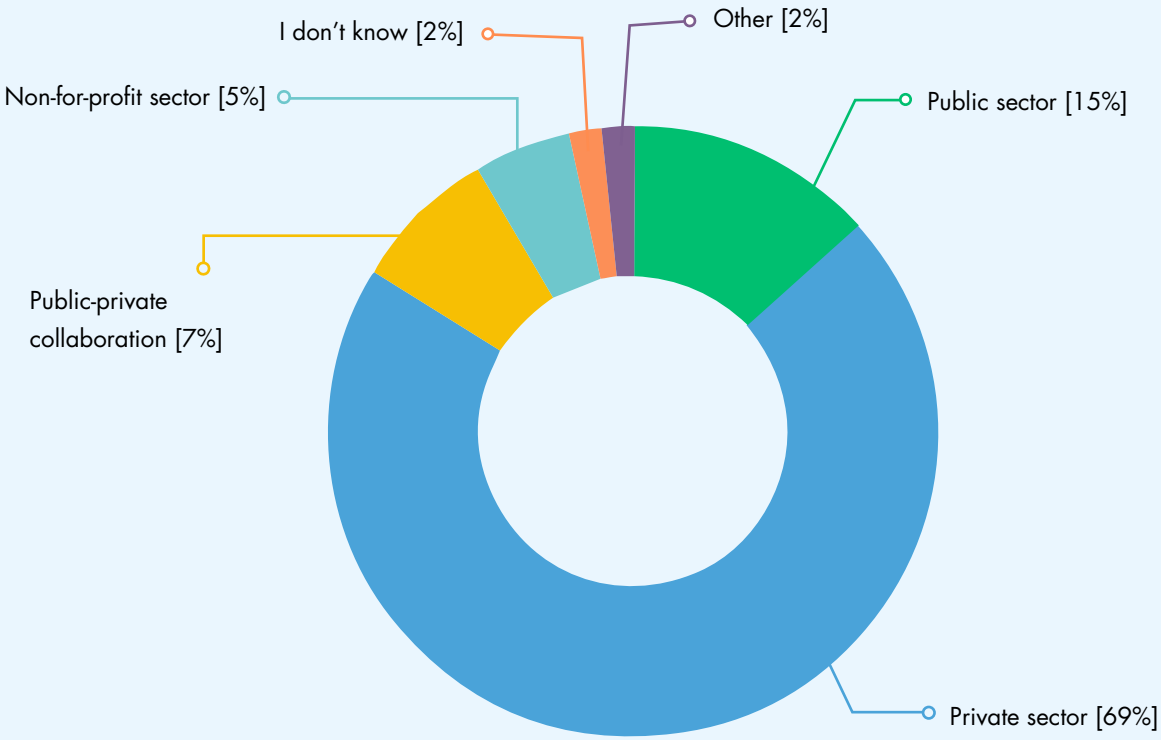
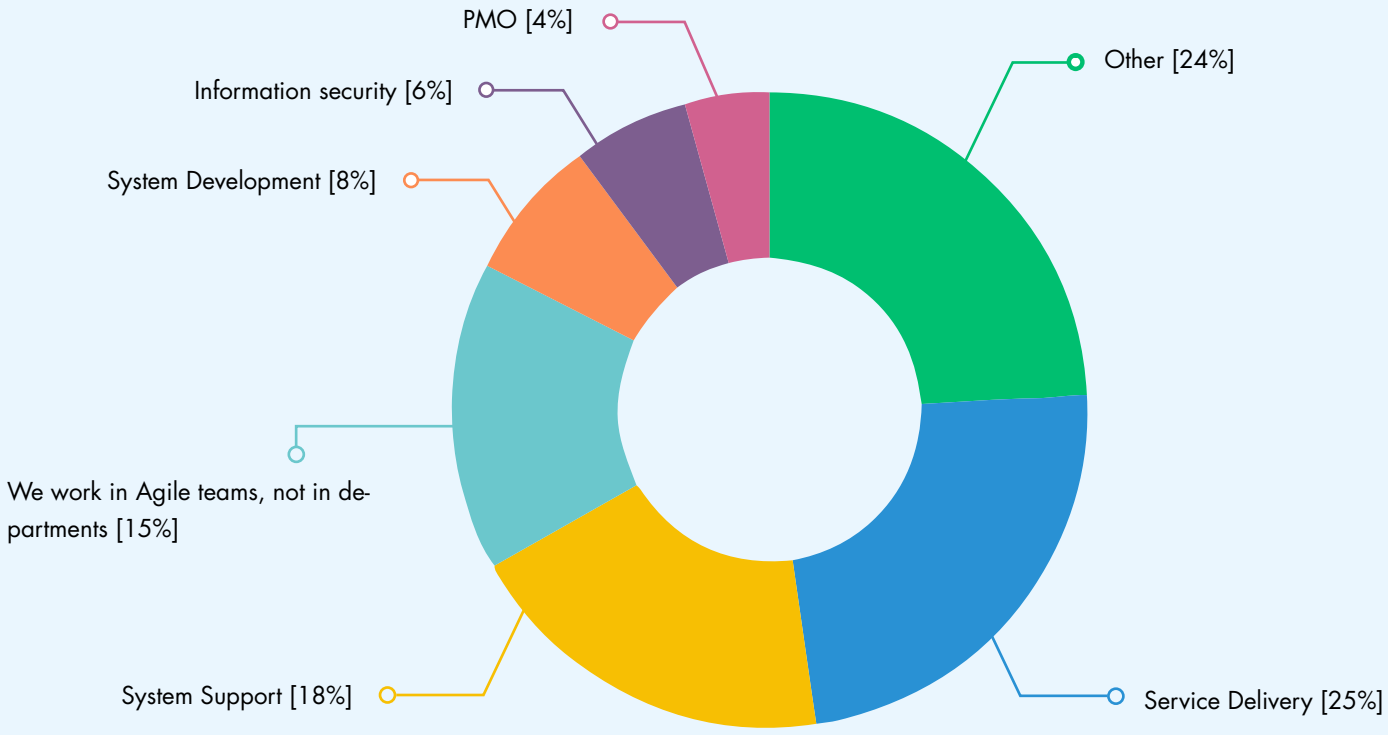
Type of organization



Respondents by department



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Cultural readiness

Our research indicates that organizations are defining strategies for the adoption of cloud and digital technologies. What is less clear is how effective these strategies will be in delivering expected, and required, business results.

Analysis also highlights a gap whereby organizations have not considered, developed, nor adopted strategies to address how to bring about changes in their culture including attitude and behavioural changes from their staff.

What we can say with confidence is that adopting technology alone will not lead to a direct change in attitudes, behaviours and culture on its own. So, are organizations focused too much on technology change? Worse still, is the focus on technology change for the sake of technology change?

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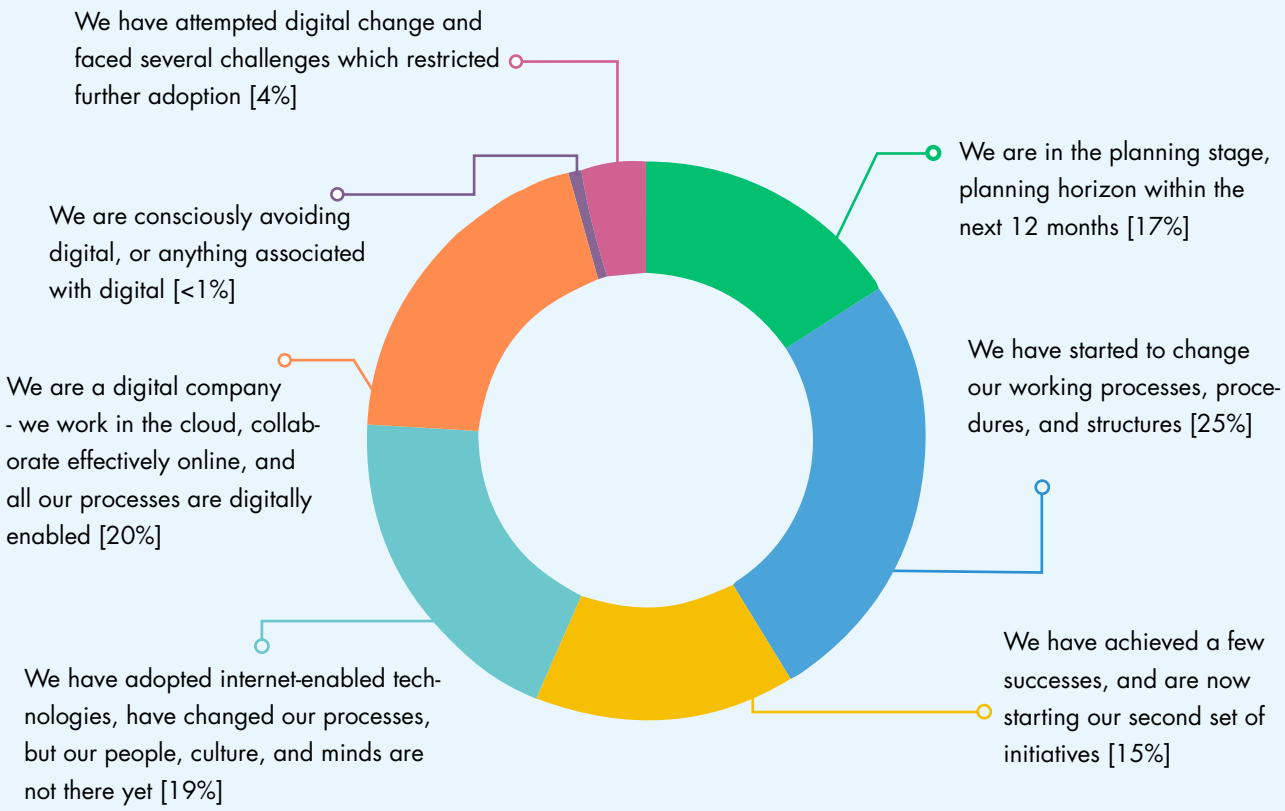
Digital readiness within the organization

As expected, most organizations, ready or not, are adopting cloud and various aspects of other digital technologies. This is a current global trend.

What is surprising is the low percentage of organizations reporting challenges when asked about the digital readiness within their organization, coming in at **4%**. On further analysis, we believe this result can be explained as organizations taking one of these two approaches:

1. **Guarded Approach.** Organizations who knew to expect challenges in adopting new cloud and digital technologies. However, they may not have known the full extent of those challenges. Therefore a more cautious approach is likely to have been taken.

2. **Pioneering Endeavour.** Organizations who prefer, or need, to adopt new coud and digital technologies first, identifying the challenges as they progress. During this journey the organizations adapts to meet and overcome these challenges.



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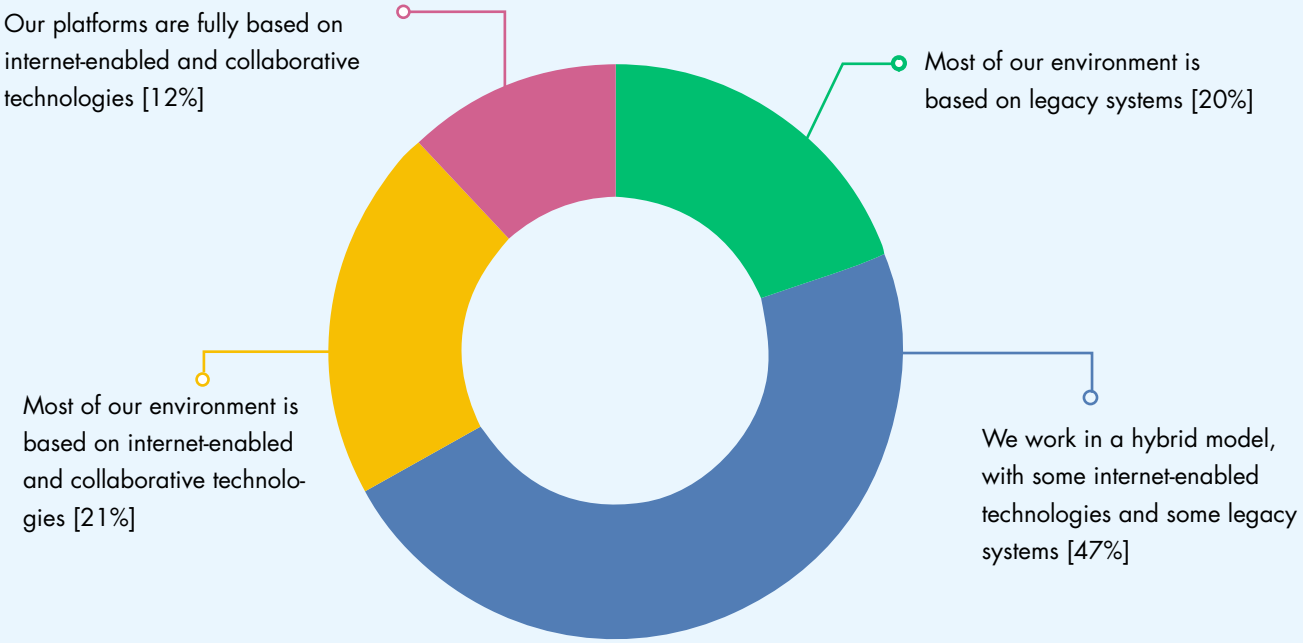
State of cloud adoption

Many organizations are now using a mix of legacy IT, traditional IT, cloud and digital technologies. Therefore, it is no surprise that almost half (**47%**) of all organizations use a hybrid or multi-cloud model where some, or all, of these old and new technologies are in use.

Feedback received by the CCC suggests that many IT leaders had expected to see a decrease in the complexity of their IT environments by migrating to cloud and digital technologies.

However, various reports, seperate to this survey, also find that; as organizations increase their level and use of the hybrid model, they also experience an increase the complexity of their IT environments.



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The results show **20%** of organizations with environments mostly based on legacy systems. These organizations should consider analysing their situation and reliance on legacy environments. We suggest some basic questions to start with:

- Should they migrate to cloud and digital technologies?
- Can they migrate to cloud and digital technologies?
- Will the benefits of migrating outweigh the costs and disruption in both the short, medium and long term?
- Will migrating maintain or improve the organizations' competitive advantage?

Organizational capabilities to drive digital strategies

We asked organizations to rate their capabilities across seven competences.

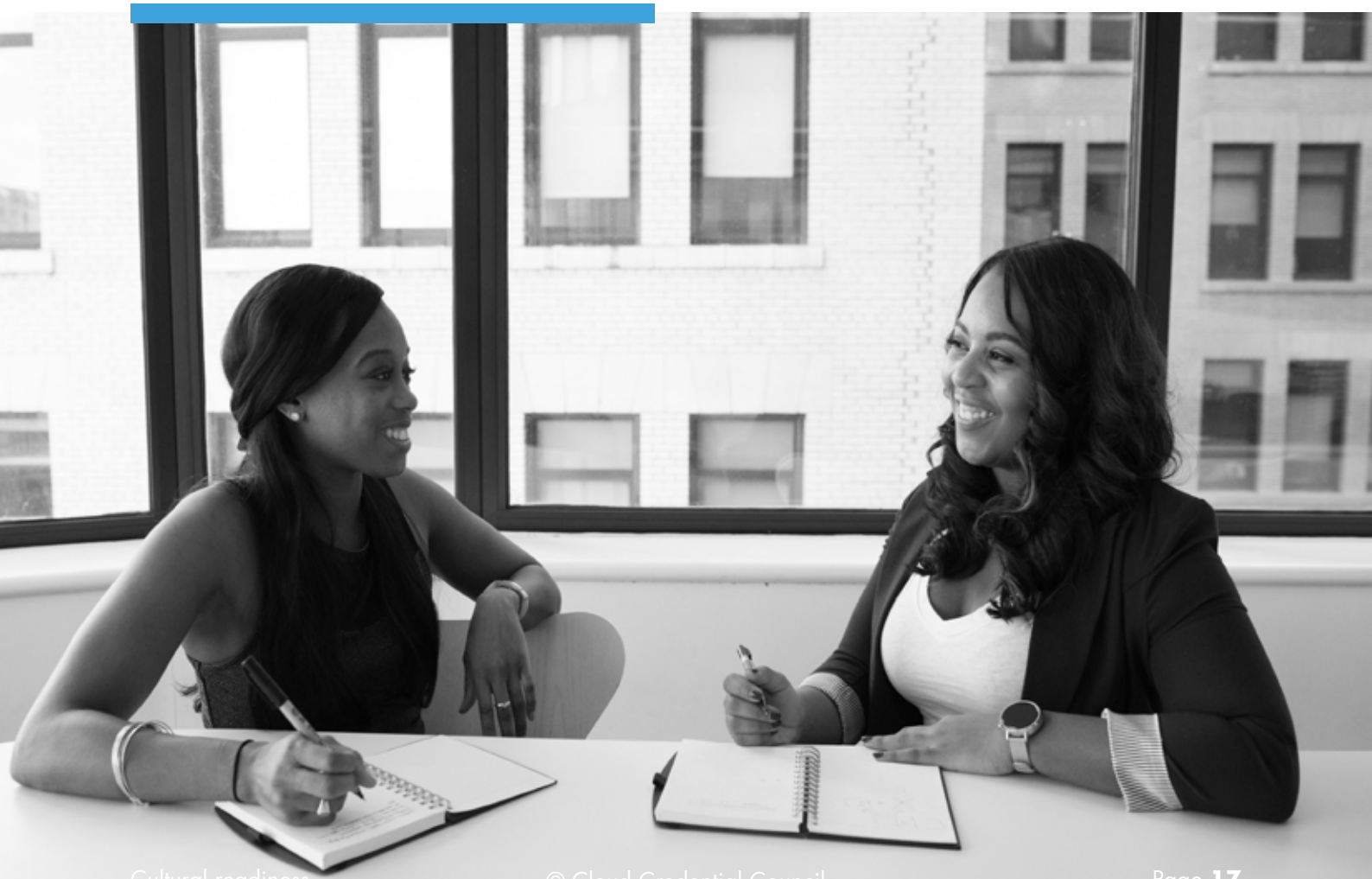
Organizational Competencies	Very Strong & Strong	Average	Weak & Very Weak
Innovation	53%	31%	16%
Data-driven decision-making	53%	30%	17%
Open culture	45%	33%	22%
Digital-first mindest	46%	34%	20%
Collaboration	50%	32%	18%
Agility	51%	27%	22%
Customer first approach	64%	25%	12%

On average, about half of all organizations view this set of organizational competencies as either strong or very strong, rating them between **45%** and **64%**. In contrast, on average only **12% to 22%** view their competencies as weak or very weak. These results trended the same across the public, private, public-private and not-for-profit sector organizations.

This suggests that, on average, **50%** of organizations have more than sufficient capabilities in critical areas such as innovation, collaboration, and agility. We suspect that if the organizations assessed these capabilities with some robust qualitative measures, then the true picture might see the scores lowered.

For example, many organizations have introduced and are using, various agile methods. They claim to have improved their agility, speed to market and their ability to introduce change quickly. However, on further examination, many organizations are less agile than they lead themselves to believe. By forcing all IT changes through a traditional change control process with long approval timeframes removes any agility from digital technologies such as cloud. However, balance still needs to be sought between agility and risk.

We believe further analysis is required by organizations to asses the qualitative nature of their competencies.

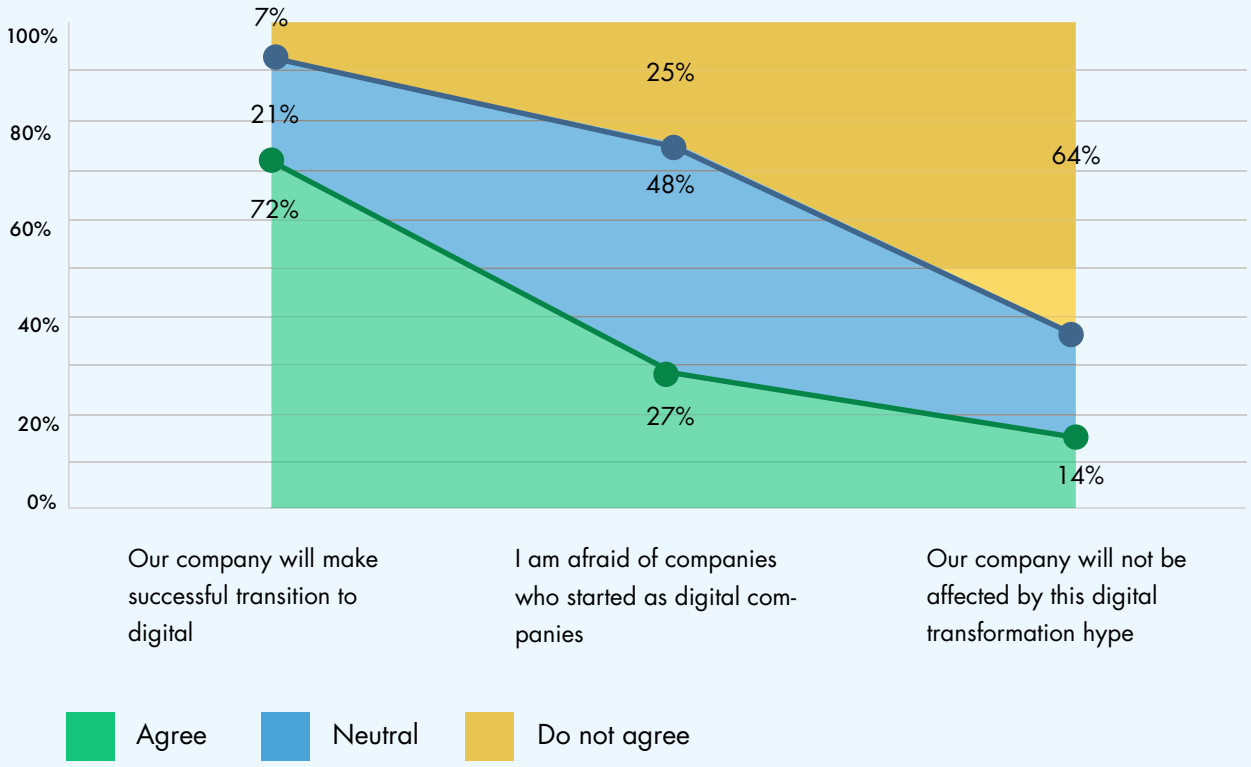


Organizational future

Organizations are looking positively towards the future. **72%** believe their organization will make a successful transition to digital and will be ready for the future.

Fear for digital native organizations

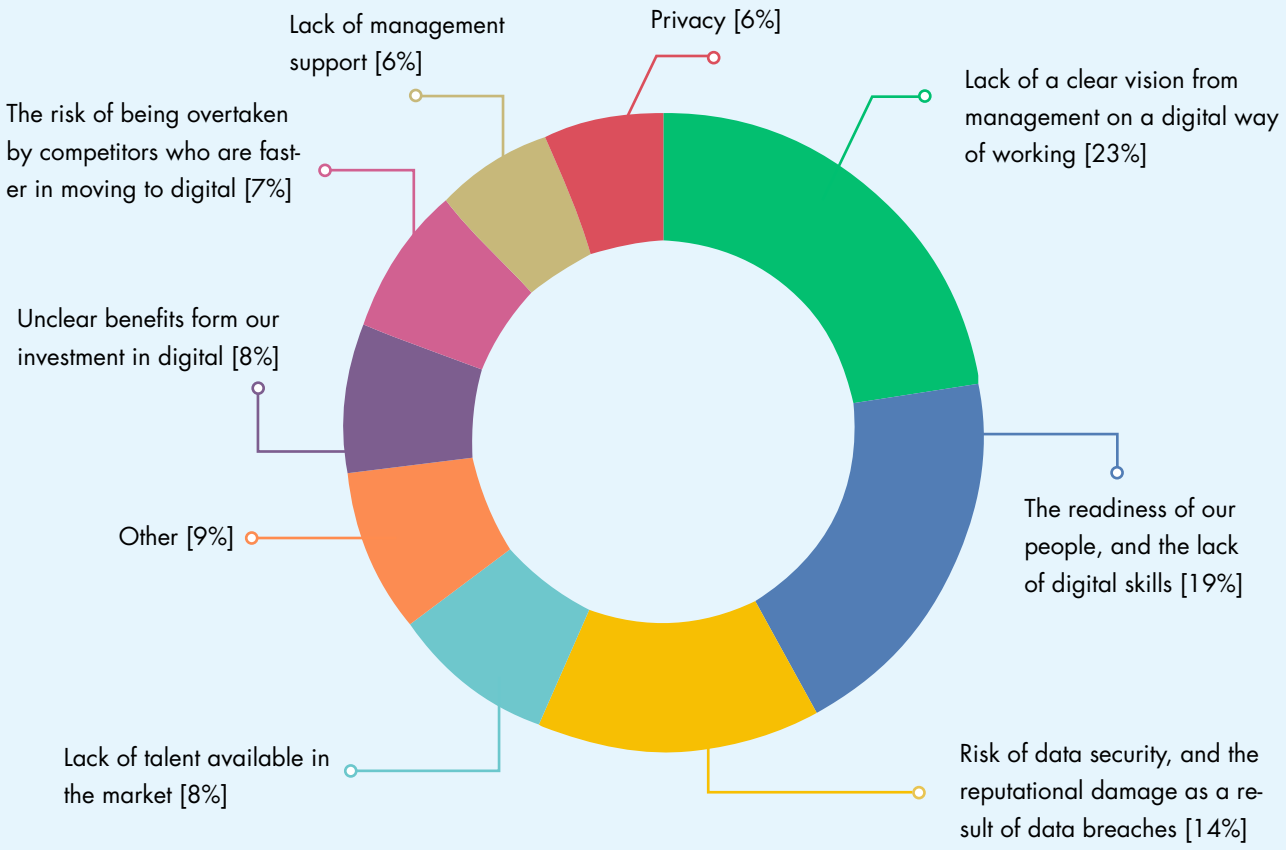
The number of respondents that fear digital native organizations (those which started as digital-enabled companies without legacy or much traditional IT) and the number of respondents that do not fear digital natives is very close, while **48%** has a neutral opinion.



Challenges in becoming a more digitally enabled organization

We asked respondents what they saw as the bigger risks facing their organizations as they develop and adopt more and more digital capabilities and technologies.

Challenges in becoming a more digitally enabled organization



Lack of management vision

Reported at **23%**. Significant factors driving this trend include:

1. Management not understanding the current digital landscape or the impact and disruption from digital technologies
2. Management not understanding the benefits or the value proposition from digital enabling technologies such as IoT, Big Data, Artificial Intelligence (AI) and even cloud

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3. Hubris. A false self-belief that upskilling for management is not required. Afterall, managers manage and it's the workers who need to upskill.

4. Fragmentation in the training and education marketplace. Which certification, training and education should be taken?

Lack of talent and readiness of people

Combined, we see that **27%** of respondents report issues with the availability of talented people with appropriate new digital skills on the marketplace and the readiness of their own staff. People, talent and skills shortages are expected during any period of intense innovation, disruption, displacement and new technology. We expect to see this trend continue. This indicates a significant issue created by organizations and IT professionals not upskilling or reskilling sufficiently to take on the new challenges brought about with cloud and digital technologies.

There still remains a perception amongst many organizations that outsourcing more of their IT environment to cloud and digital providers will lead to a reduction in staff numbers and therefore reduce costs to the business. This can be very short term, and financially focused, thinking in an era of new technology, innovation, and change.

Organizations should consider the following advice:

- Outsource technology and IT services of a commodity nature; and strive to find cost savings there (though it may take some time).

- Right-size staffing levels; on a needs-basis, not as a way to cut costs. After all, most organizations have already invested in upskilling their staff over the years, so why waste that investment. Instead continue to invest in upskilling.

- Retrain, reskill, up-skill and educate their staff to work with, use and manage these new digital technologies.

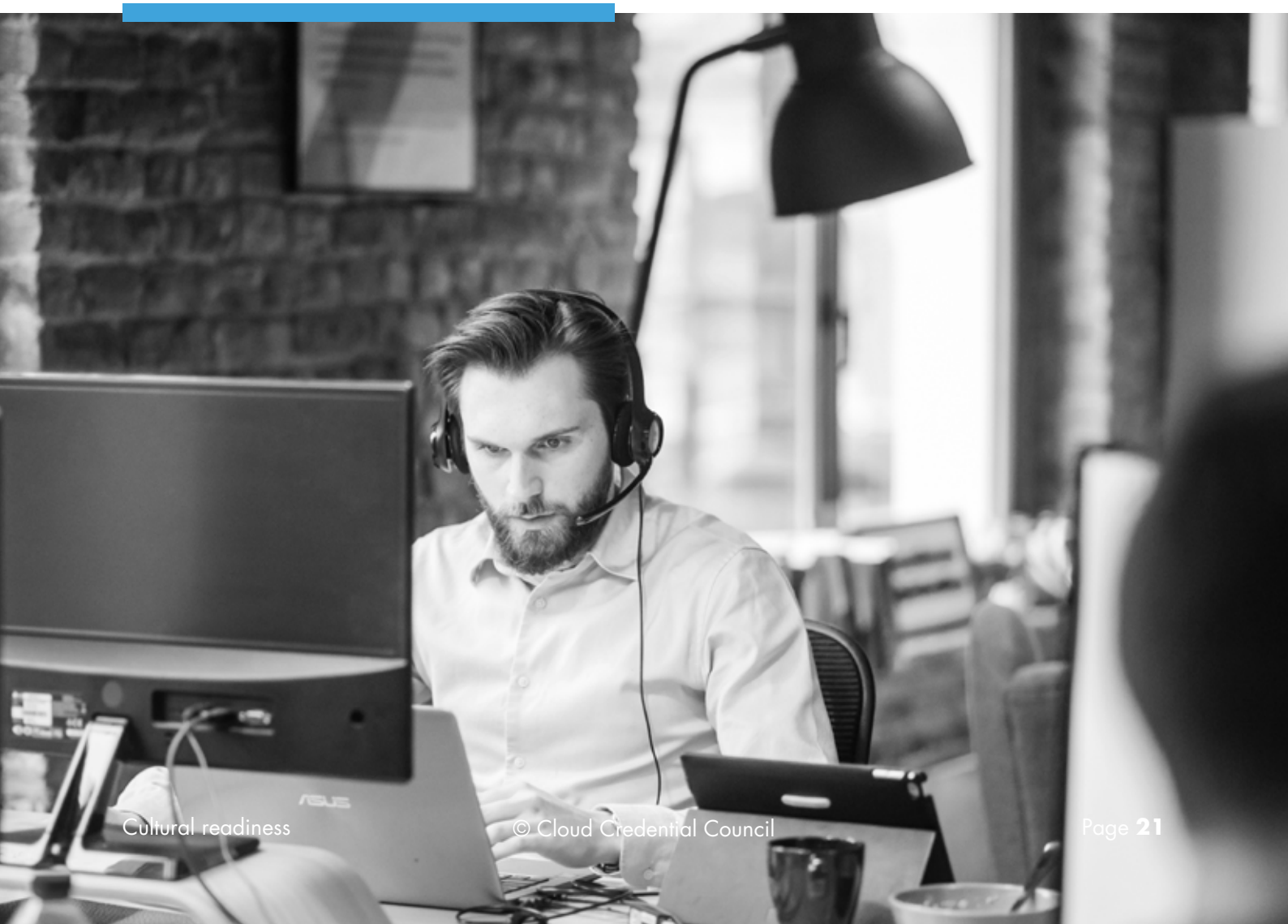
- Recognising that trying to fully outsource the architecture, design, management and security of new digital technologies is likely to increase risks, not decrease them.

Prohibitors for digital

It is clear that the move to digital is something that is not taken lightly by the respondents; only **14%** believe that their company will not be affected by the transformation to digital.

However, there is a large number of barriers foreseen by companies making the move to digital, including:

- Lack of skills - both technical and non-technical
- Not having the right talent within the organization
- Staff not sufficiently trained, educated or ready to deal with change brought about by digital
- A lack of management support
- Lack of a clear vision from management
- Fear regarding the possible risk of data breaches and reputational damage



Individual readiness

We asked respondents how they perceive the future from the perspective of their current career.

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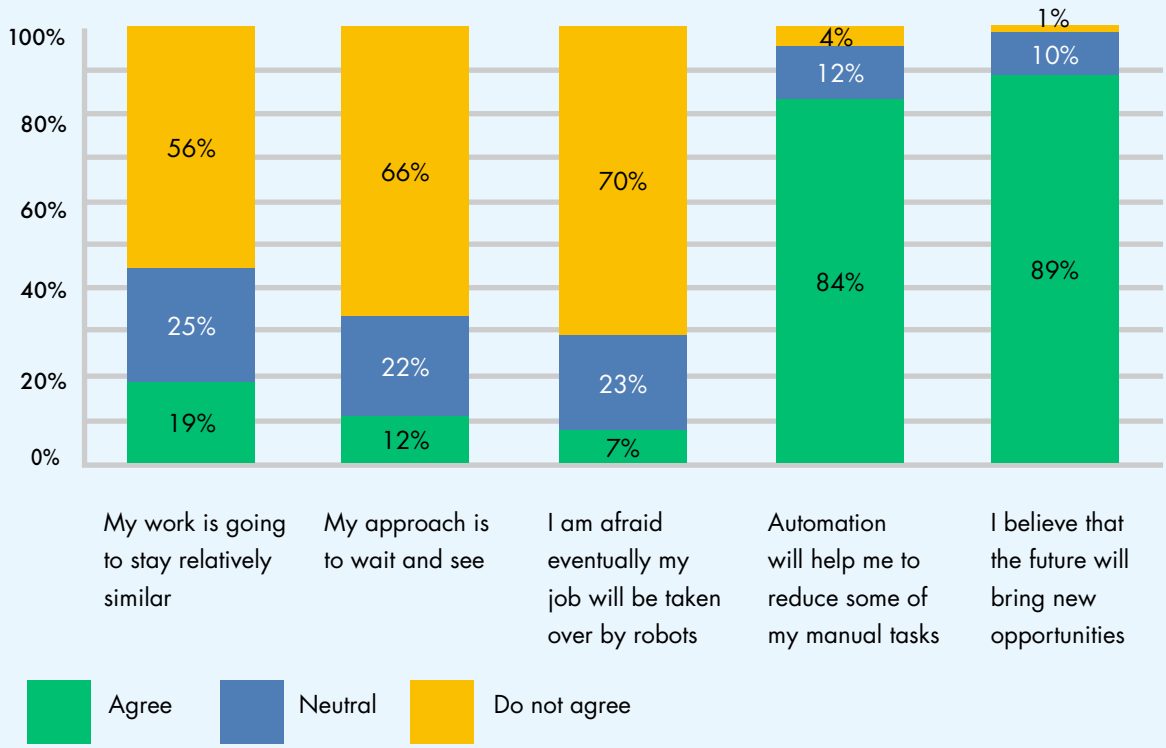


44% believe that their work is likely to stay relatively similar. Respondents are not expecting any significant impact of digital during their career.

This worked out as **19%** Agreed, **25%** Neutral and **56%** Not Agreed. We did not expect this. In reality, digital is having an impact on jobs and is displacing various traditional jobs. However, digital is also creating new roles and jobs, but people need to upskill to be able to perform in these new roles.

In contrast, **12%** said they would adopt a reactive wait-and-see strategy regarding any potential changes to their career or current job, with an additional **22%** unsure of what to do. This yields a total of **34%** adopting a wait-and-see approach. We found this figure to fluctuate the most during the survey, at one time it was as high as **55%** of respondents reporting a wait and see approach, with a low of **21%**.

70% did not believe that their job will be taken over by robots. What will be useful for the next report is to define more clearly what robots relate to.

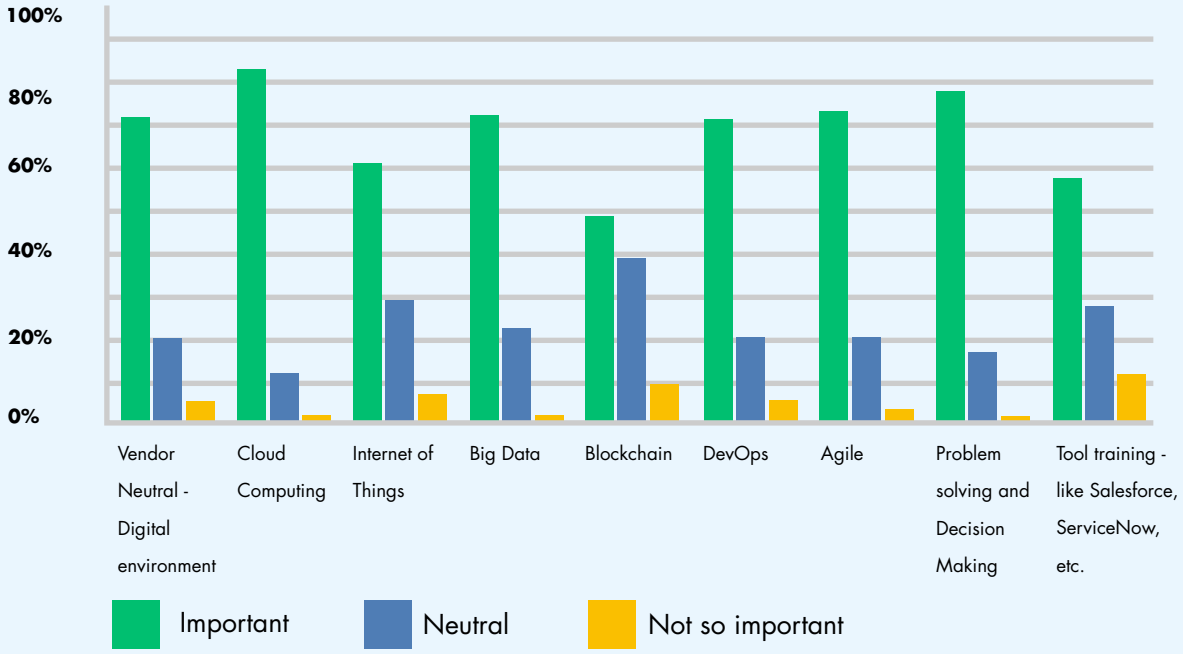
96% believe that automation will help to reduce some manual tasks enabling them to focus on more value-adding activities. Globally, there is an increase in Robot Process Automation (RPA) which is driven by software and not actual physical robots. Such automation does take over elements of manual and repetitive work, and from a certain cohort of employees.

Overall, a reduction in the more manual, repetitive and laborious tasks is seen as beneficial to both the organization and individuals.

Respondents look positively at the future

89% of IT professionals believe that the future will bring them new opportunities and exciting new career challenges in the years to come. They believe that in the future, such changes will allow them to focus on more value-adding activities, and new opportunities for their career.

The importance of education and training for successful digital transformation



In our on-going research, the CCC has found four common pillars of learning which are common cross digital.

The Four Pillars of Learning for Digital are:

1. Vendor-Neutral
2. Tools
3. Digital Domains

74% of respondents rated 'generic training' important. This contrasts with **59%** who viewed tool training on vendor-specific applications and tools as important.

Organization who only train and upskill staff in specific cloud services and the latest digital technologies can end up in a situation whereby these services and technologies actually operate independently of each other, in other words, in silos.

Generic training and vendor-neutral training focused on cloud services and digital technologies help organizations to effectively select, integrate, operate and improve their use of these technologies and solutions. They provide an overall foundation to understand the business side of cloud services and digital technologies, and to work with the organization to achieve business outcomes.

Luckily, recent years have shown a push towards vendor neutral training, and this relates to not only IT professionals, but also service managers, and project managers.

4. Technical & Non-Technical

Vendor-Neutral. Hybrid IT and digital strategies means multi-vendor tools, solutions, services and platforms used throughout organizations. Vendor-neutral approaches and guidance help make hybrid IT and digital environments and strategies work.

Tools. Focus on how to use the tools, platforms, applications which underpin, enable and provide digital services.

Digital Domains. Specific areas including Cloud, Big Data, Internet of Things (IoT), Blockchain, Artificial Intelligence (AI) etc.

Technical & Non-Technical. Technical and non-technical training and education to enhance people and their organizations.

What is strikingly obvious from respondents is that ALL of these pillars are important. An overwhelming majority of respondents rate training and certification as important in their transformational journey, where less than **6%** find it not important.

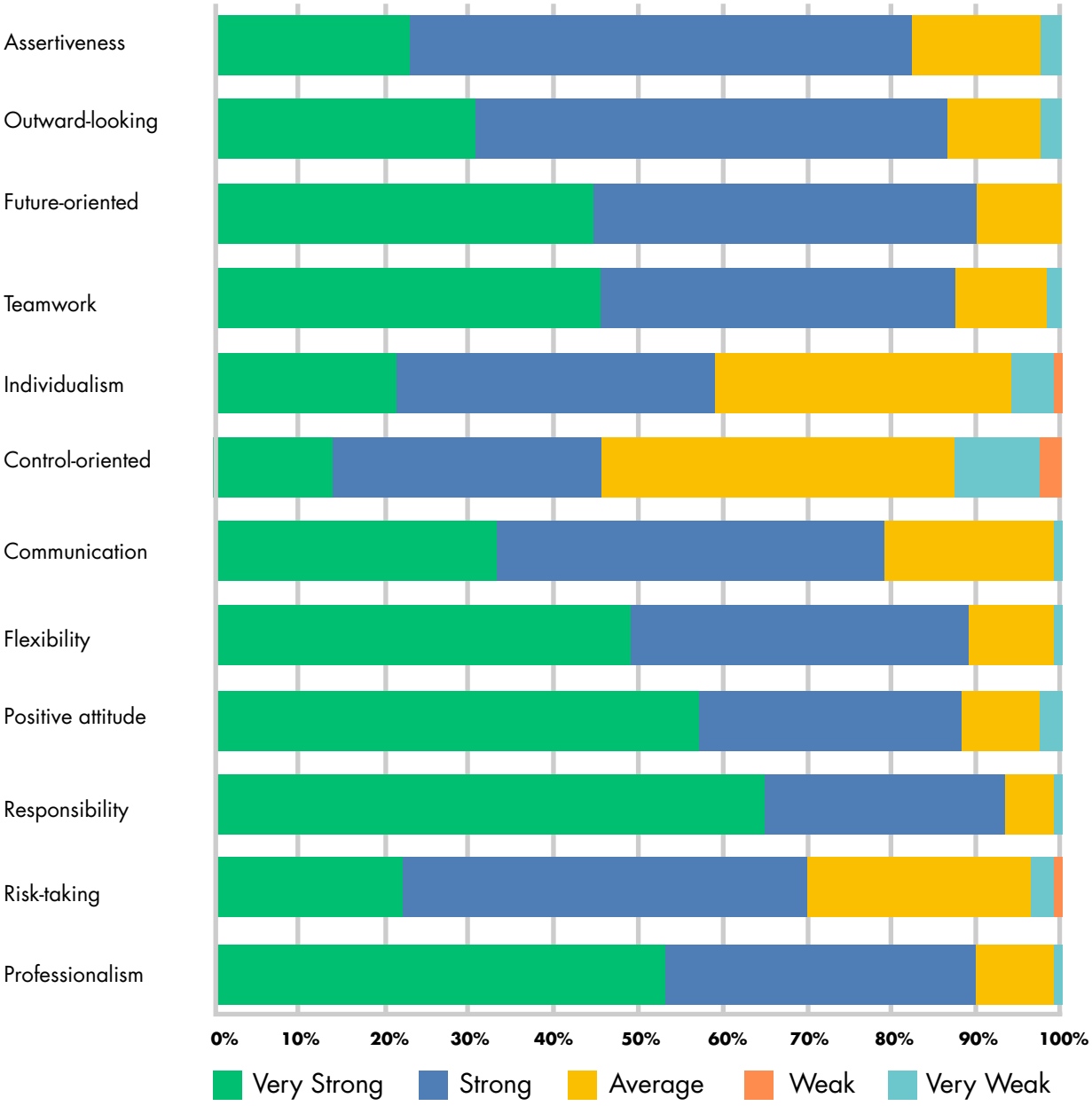
There appears to be a realisation that to be successful with digital, it requires more than just technology adoption coupled with technology-specific training. This is refreshing to see from the survey. However, it is likely that digital training and learning will continue to over-focus on the tools aspect.

Cloud computing training and certification is at the top of the list for professionals working for

digital companies - **85%** of professionals find cloud certification important in their journey to digital transformation.

Cloud, Problem-solving, Agile, and DevOps are considered the most important certification programs. These training areas are in line with the findings of the World Economic Forum as defined in their Future of jobs report.[1]

Personal skills and capabilities



1https://www.weforum.org/agenda/2018/09/future-of-jobs-2018-things-to-know/

For these questions, we focused on a number of broad personal skills and capabilities, as opposed to specific knowledge areas.

The graph shows that all respondents rated the majority of their personal skills and capabilities as either strong or very strong. This result is from a demographically wide-ranging cohort covering;

- Owners/Executive/C-Suite to entry-level staff
- Public and private sector organizations
- Profit and not-for-profit organizations
- A global cohort with a wide age profile

Initial analysis indicates that organizations, in general, seem to have staff with at-least sufficient-to-considerable levels of critical personal skills and capabilities. This is very positive.

Yet, we continue to see reports of redundancies and staff exiting organization, especially various levels of IT professionals. Why are such people exiting organizations, largely on a compulsory basis?

Ongoing market research continues to show that cloud and digital technologies such as Artificial Intelligence are still being positioned in the market as enablers of cost reduction. This also infers reducing the organizations' workforce. There are positives and negatives to this.

The positive, in financial terms, is cost reduction and in technical terms, the use of more agile and scalable digital technology. The negative in corporate terms is a reduction in the organizations personal skills and capabilities to actually get the benefits and advantages from agile and scalable digital technology. This is indeed a paradox.

In our critical findings, we identified that; Organizations require staff to have the ability to acquire skills quickly as opposed to having skills.

Therefore, a good strategy to adopt is for the organization to train, educate and upskill individuals on digital skills instead of exiting good and loyal employees and then having to develop new staff with these types of personal skills and capabilities, and then upskill them for digital too. It is likely to be also quicker, cheaper and more effective.

Organizational readiness

We took eight broad areas to examine regarding organizational readiness. Observations from the results show the following.

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	Completely Agree	Agree	Neutral	Disagree	Completely Disagree
My organization has defined clear goals for working in a digital way.	27%	38%	20%	11%	3%
My organization is measuring our performance towards our digital readiness on a regular basis.	16%	36%	21%	18%	8%
My organization focuses on acquiring internet-enabled technologies.	29%	47%	13%	8%	3%
My organization focuses on collaboration and flexibility of working.	36%	35%	18%	8%	4%
My organization has started initiatives to work in a more flexible, team-based structure, Instead of siloes.	27%	46%	15%	11%	1%
My organization is providing training to help employees become more digitally aware.	23%	34%	23%	12%	8%
Management works closely with our teams and in our teams, and is not managing us in a top-down structure.	23%	29%	23%	17%	8%
My organization is actively recruiting digital natives, people who are keen to collaborate, find it easy to use internet technologies and have a digital-first attitude.	16%	34%	28%	14%	8%

Organizations are embracing digital

Organizations are embracing digital, and leadership is creating the right structures and incentives for it. A lot of organizations still need to implement the right system for measuring performance towards digital readiness. Only **35%** disagreed when asked if their organization had defined clear goals for working in a digital way. In a future survey we aim to look into the qualitative nature of such goals.

Organizations support the transition to digital

The majority of organizations surveyed are actively supporting the transition to digital. **71%** of the organizations are actively supporting collaboration and flexibility of working. **66%** of organizations have defined clear goals and objectives for working digital, and **77%** of the respondents state that their organizations are migrating to working in team-based structures instead of siloed departments.

Organizations changed their recruiting strategy

Half of the organizations have started recruitment initiatives, actively recruiting professionals with digital various digital skills. Recruitment is still strong for professionals who possess and can demonstrate skills in cloud (technical and non-technical), Big Data, DevOps, Site Reliability Engineer (SRE) etc.

There is also **50%** of the cohort who disagreed, indicating their organizations may not be actively recruiting. However, there are indicators that many within this cohort are currently upskilling existing staff and improving the digital capabilities of their people and talent.

What is clear is those who fail to upskill and reskill and fail to acquire new digital skills, be it technical or non-technical, will be left behind in the internal and external search and hiring of talent, employees and experienced staff.

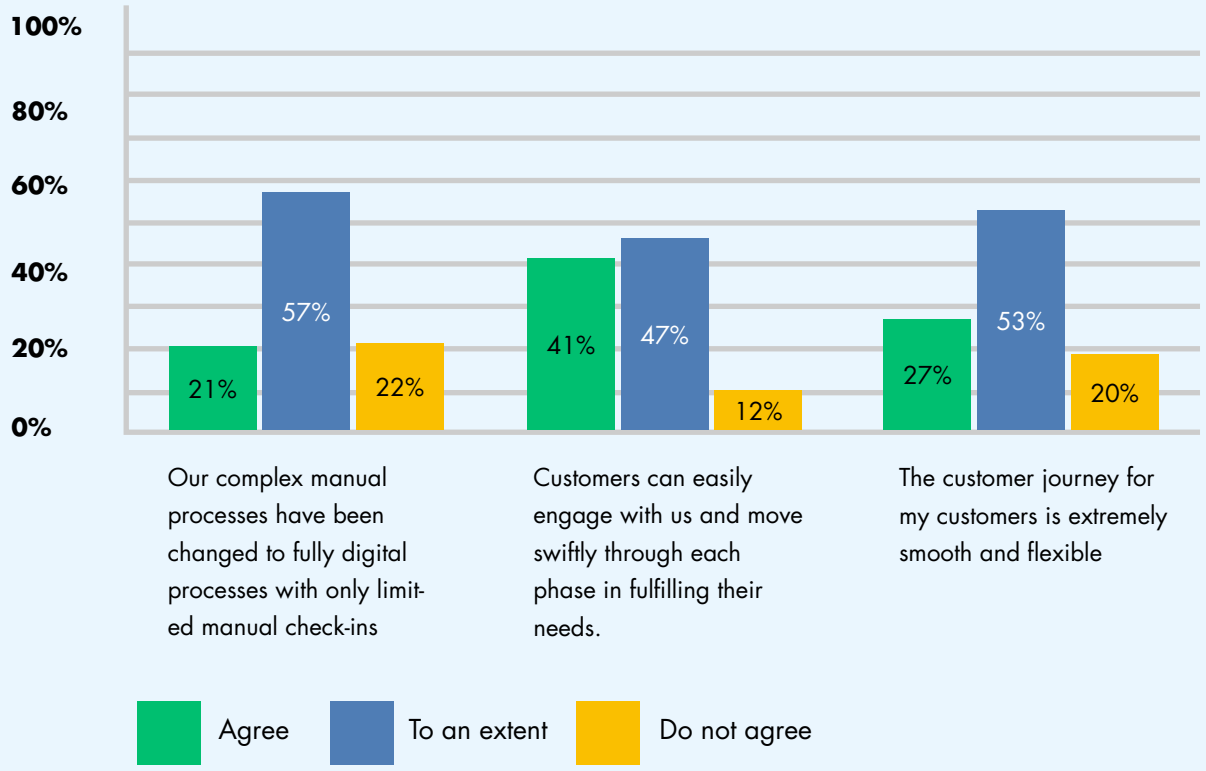
Digital is the way forward

Most of the organizations are actively working towards digital. When asking for specific comments, many of the respondents stated that they realize that digital is the only way forward. Their organizations cautiously started investigating digital initiatives. There are not many respondents who stated that they are fully ready for digital and that digital is essential for future growth. As digital technologies are dynamic, and also continuously evolving, continuing education is becoming essential.

When we asked for a number of examples of projects that helped the organization become digital many mentioned a migration to cloud-based solutions, partly to make working from other locations than the office easier. This included Office 365, but also collaboration tools like Microsoft Teams and Slack. Other exams come from retail, as demand grows for a product, the cloud allows rapid resizing of web shops in order to quickly adapt to demand, and scale back in quieter times. This allows for a better use of capital expenditure. There are a few examples of fully digital companies, that claimed to not even have a printer in the office.

Processes-level change in organizations

We asked this question. How well has your organization changed the way people work in the organization, its processes, and procedures?



Almost **57%** of all organizations have to some-extent readied themselves in terms of changing manual processes, customer engagement, and a smooth customer journey.

Customer first - organizations are spending a lot of time in improving the customer journey, making sure that customers can very easily navigate through the value chain and engage with the organization.

47% of the respondents are confident that customers can very easily navigate through the value chain already. Many organizations feel that their processes, however, are still quite complex, and need further work to enhance the customer journey. While digital can reduce elements of this complexity, it is also not a panacea to fix existing problems and challenges alone. The right mix of individual and organizational skills, capabilities and competences are needed to benefit from this current wave of digital transition, optimization and transformation.

About the authors

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Mark O'Loughlin is the Managing Director of the Cloud Credential Council (CCC) and owner of consulting firm Red Circle Strategies. Mark is internationally recognized as a global thought leader in IT, cloud and digital strategies, and is a published author in digital IT, cloud computing, DevOps, cloud service management and IT Service Management.

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Cloud Credential Council

The CCC is a leading provider of vendor-neutral certification programs that empower IT and business professionals in their digital transformation journey. The CCC has been supporting the professional development of professionals since 2013, and has delivered certifications in over 75 countries across all types of industries and governmental agencies.

The CCC chooses to work in areas that are related to the massive transformation organizations are undergoing to become digital leaders. The Internet of Things, Big Data, Cloud and Blockchain are potential disruptors and can revolutionize the way work is being done, change business models, and requires us to rethink what we do.

The CCC Portfolio includes foundation level programs on Cloud, IoT, Big Data and Blockchain, and Professional role-based certifications for Cloud. The CCC works with over 200 registered training providers across the world to deliver in-class or virtual CCC training programs. The CCC also engages directly with professionals who are looking for self-study or online learning programs.

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