

The Need for Cloud Computing Professionals Amidst South Africa's Changing Digital Landscape

"Migrating to the Cloud is fast becoming key to business success." – Basha Pillay, Internet Solutions

The Cloud is no longer just a 'buzzword' but a reality. It is a new way to deliver and provide access to advanced infrastructure required to run sophisticated enterprise applications, while increasing the capacity to meet a business's demand. **Cloud computing involves the delivery of computing services – ranging from applications to storage – over the internet.** The speed at which this digitisation is occurring is significantly altering the skill sets required by companies to remain in a



competitive market.

Similarly, a fundamental shift in business models will be needed as more organisations are adopting the Cloud.

In an article written for the ITWeb 2019 Cloud Summit held in Bryanston, Johannesburg, Basha Pillay, the Executive Head of Cloud and Collaboration at Internet Solutions highlighted that "in conjunction with the Internet of Things (IoT)

and artificial intelligence, cloud computing is already revolutionising the way businesses work, as well as the manner in which customers interact with brands" (Pillay, 2019). This is one of the reasons that prompted our company to introduce our 'Future Talent' desk (TalentTrek) with careers in the 21st century as a focus area, because we believe that there is a need for critical skills in this field in our country and in the continent.

In this newsletter, we look at the rise in cloud computing and its impact on the South African job market.

Growing cloud presence in South Africa

In a 2019 report published by Gartner Inc, **South Africa is forecasted to be the fourth fastest growing IT market in the world** by the end of 2019, and this is owed to the country's increasing adoption of cloud computing by local companies.

South Africa's growing embrace of this technology is also largely driven by the investments that are being made by international cloud providers in local data centres, e.g.

- IBM announced its first Cloud Data Centre in South Africa in 2016 (IBM News Room, 2016).
- Huawei made an announcement in February 2019 of the construction of two data centres in South Africa (Reuters, 2019)
- Microsoft launched its first Azure Data Centre in Johannesburg and Cape Town (Businesstech, 2019).
- The global market leader Amazon Web Services (AWS) launched three data centre operations in Cape Town (Nasdaq, 2020).

Our view is that, with the opening of these local data centres and increased demand in this area, the adoption and use of the cloud will continue to grow in South Africa and new job opportunities will be opened. For example, the International Data Corporation (2019) report compiled in collaboration with **Microsoft predicts that spending on public cloud services in South Africa will almost triple from R4,20 billion in 2017 to R11.53 billion in 2022.** This increasing growth of cloud-based services should create a myriad of job opportunities for the future, as most companies use some form of cloud computing. As the IDC predicts, the adoption of cloud services will generate nearly 112,000 jobs in South Africa.

On the other hand, we also need to consider the impact of COVID-19 on career development. According to Riaz Moola, the CEO and founder of HyperionDev, “we are likely to see job posts and career opportunities that differ from those offered previously. The onset of remote working and the dramatic focus on digital and virtual offerings means that people skilled in supporting these areas will be in much greater demand” (Delpont, 2020).

As cloud technologies continue to transform organisations at a rapid pace, the need for workforce with the necessary cloud skills is similarly increasing. Thus, creating an opportunity to reskill current teams and to upskill graduates or the youth as the future workforce.

Education should be a major strategy in narrowing South Africa's digital skills gap. The cloud provider, AWS has collaborated with three local tertiary institutions, namely Durban University of Technology, University of Cape Town, and the University of Johannesburg to produce cloud professionals through its AWS Academy Programme. This includes the offering of a specialised curriculum designed to improve and develop in-demand cloud computing focused skills. This makes South Africa the only African country and one of the 33 countries worldwide to offer this curriculum at its institutions. This investment in the skills and education of South African youth puts them at the forefront of the digital revolution. Based on this, the need for cloud computing skills in South Africa is evident.

“AWS Academy will help students in South Africa by teaching skills that open job opportunities, and also help Standard Bank find skilled cloud talent so that we can accelerate cloud adoption and continue to provide our customers with leading-edge financial services and solutions.”

**– Josef Langerman,
Standard Bank**

Our company’s research findings

Our company, TA & Badira, conducted research among 175 subjects using InMail invitations and telephonic questionnaire interviews. The survey findings are described below:

Common cloud related job titles

Broadly we found that cloud computing specialists can take several different job titles and roles, the most common being:

- Cloud solution architect – oversees an organisation’s cloud computing architecture and strategy
- Cloud engineer – responsible for the technical workload associated with a company's cloud computing environment
- Cloud developer – designs and develops secure cloud products, applications, and services
- Cloud security engineer – provides security strategies for cloud-based platforms

While organisations are increasingly implementing cloud servers, there is also a strong need for cybersecurity measures to be put in place to mitigate risk - and this demands a need for cybersecurity professionals.

DevOps automation is also becoming more cloud centric. Traditionally, DevOps focused on streamlining a company's ability to develop and release software products and services, merging development and operations for continuous delivery at a high velocity. However, with most private and public cloud computing providers supporting DevOps on their platforms, there would be an increase in demand for DevOps Engineers.

Top industry vertical markets

Figure 1 illustrates some of the top industries that are leveraging cloud-computing professionals. The ICT and Financial Services industries are leading the path at 56% and 23% respectively. This is expected since cloud computing is a part of the ICT ecosystem and Finance companies typically are the first into technology trends. On the other end of the spectrum, it appears Broadcasting and Government are still lagging. It is also evident that there are several industries that are slower than others in adopting cloud technologies and in hiring related specialists - and this is particularly in Government. The migration to cloud in these lagging sectors will not only increase the efficiency of service delivery and reduce infrastructure costs, but will create opportunities for the development of critical skills in cloud computing to meet the demands of the Fourth Industrial Revolution in the country.

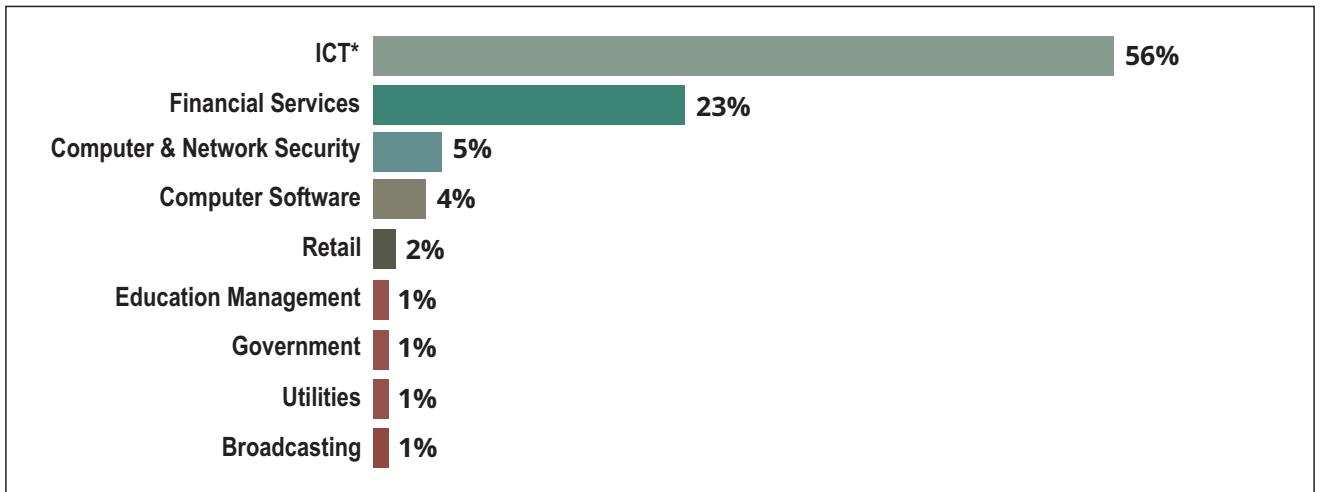


Figure 1. Cloud-computing specialists across industry verticals*

* The ICT industry has been grouped to include the Information Technology & Services and Telecommunications sectors.

* The 6% of observations not shown describe an aggregate of industries with less than 1% of the sample.

Current companies employing these professionals

Within our sample (n=175), the top companies investing in cloud talent include Standard Bank (10%), Amazon Web Services (9%) and Absa (7%). Top ICT companies such as Dimension Data, BCX and Vox

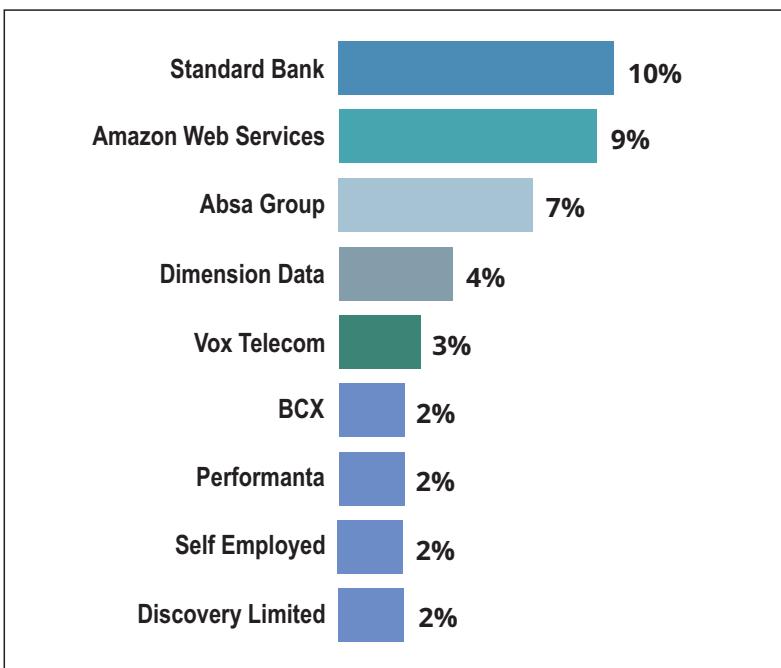


Figure 2. Current organisations where the professionals in our sample pool are employed*

*The 59% of observations not shown describe an aggregate of organisations with less than 1% of the sample.

Telecom follow closely behind. Interestingly, 2% of the talent pool are self-employed, suggesting an emerging paradigm of freelance work.

Education

Formal qualifications held by the talent pool can be seen in Figures 3 and 4. The majority of individuals hold a traditional Information Technology (44%), Computer Science (26%) or Computer Engineering (7%) degree qualification. However, some hold degrees in Business Administration & Management (5%) or other Engineering qualifications such as Electrical Engineering (4%). With regards to highest level of qualifications, 43% of the talent pool have a Bachelor's degree, 20% hold a

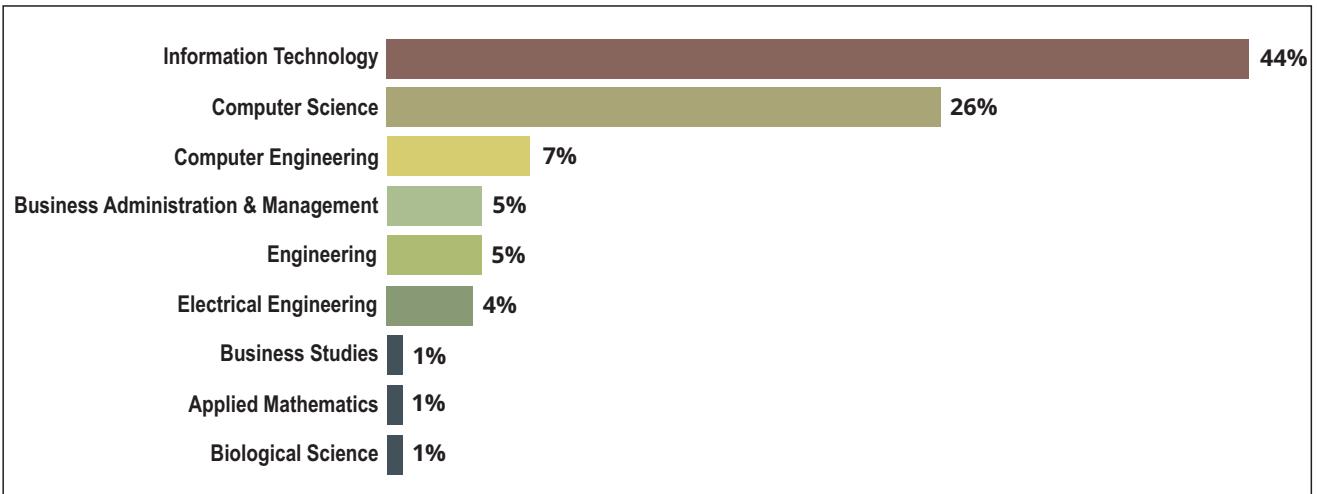


Figure 3. Distribution by field of study*

*The 6% of observations not shown describe an aggregate of fields of study with less than 1% of the sample.

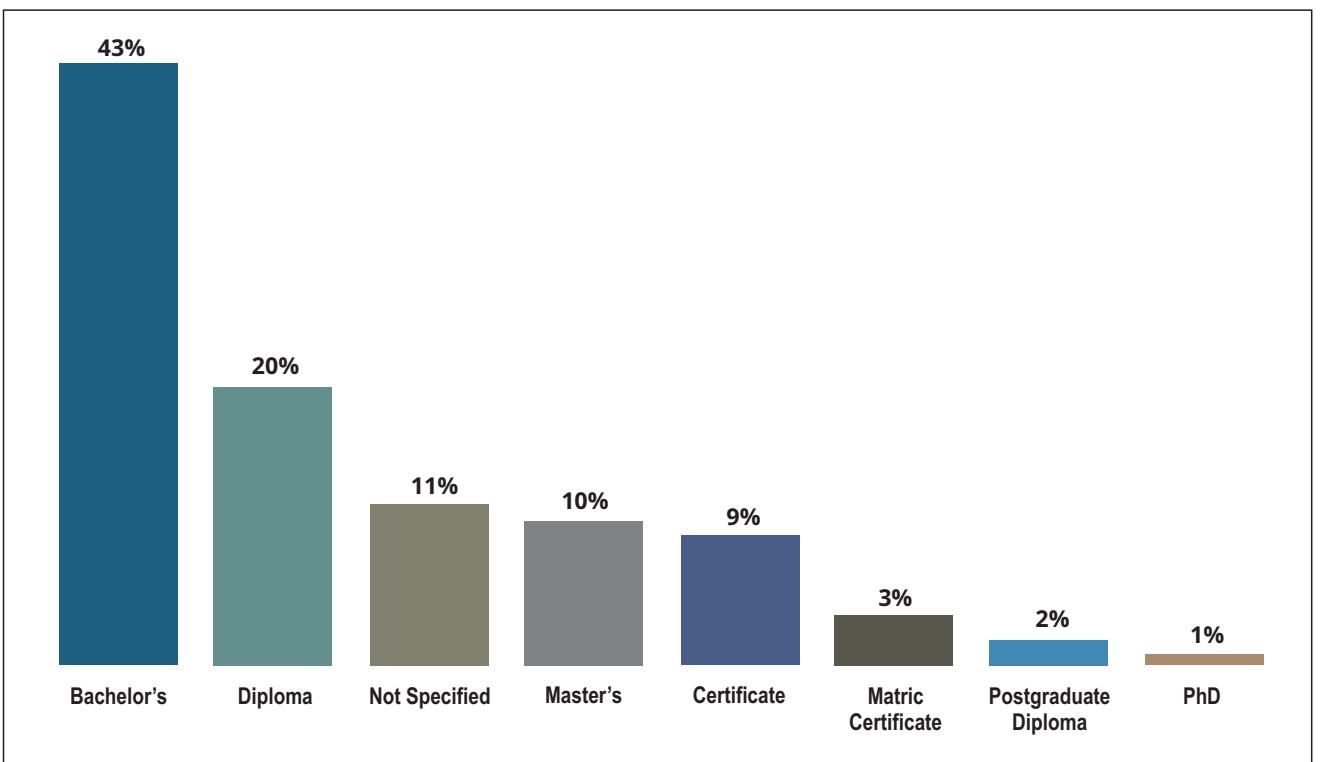


Figure 4. Distribution by level of education

Cloud computing training and certifications

Due to the highly competitive job landscape of this field, cloud computing training and certifications differentiate one's profile. Here are some of the most common certifications found in our sample:

Table 1. Most popular cloud certifications in our sample pool (n=18)

Microsoft Certified Solution Expert Cloud	38%
VMware Certified Professional	38%
AWS Solutions Architect	25%
Cisco CCNA Cloud	25%
Microsoft Certified Azure Solutions Architect Expert	25%
Oracle Cloud	25%
Dell EMC Cloud Architect	13%

Companies should leverage available training programmes to help their staff to further develop the fundamental skills and knowledge required to transition into cloud roles.

Total years of work experience

The talent pool was grouped according to their years of total work experience. Figure 5. describes this range where 51% of the professionals have more than 10 years' work experience. However, it is worth noting that these years of experience may not be solely cloud-related since this is a relatively new field.

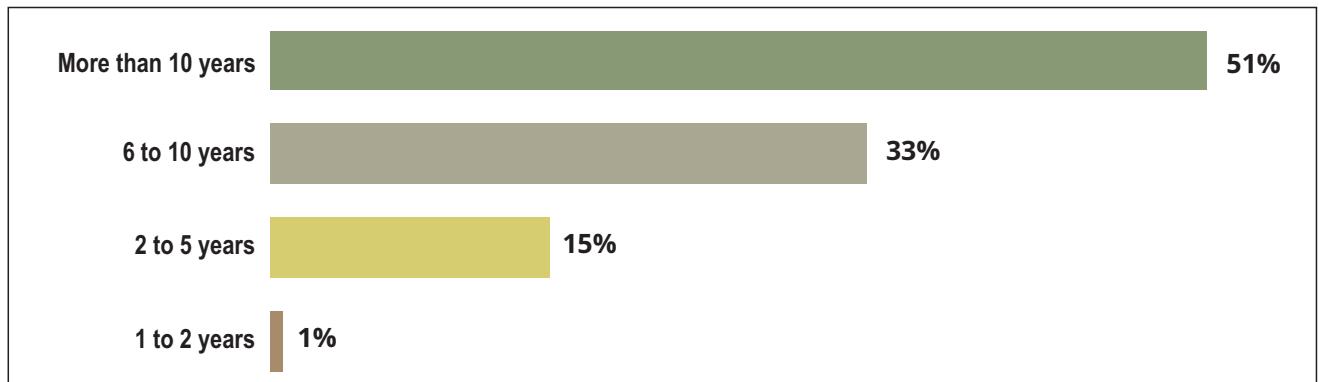


Figure 5. Range of years of working experience

What can be expected?

In this digital era, South Africa can expect to see a significant uptake of cloud services in most sectors of the economy. As a result, cloud-related skills will be more in demand than before. There is also still a significant lack of skilled and qualified professionals to support the movement towards cloud computing, especially within the non-tech related industries such as Government, Retail and Education. Therefore, an education and training strategy within organisations and tertiary institutions will be crucial to leverage the skills that professionals currently have and to produce strong graduates in these fields. Moving to the cloud can provide great opportunity for business, but without the required skilled resources, these benefits will not be fully realised.

TA & Badira is a human capital and management consultancy firm.

For more information, visit our website.

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