Cloud computing has become a major trend in business over the last few years as higher levels of connectivity make Cloud Computing an increasingly legitimate opportunity for large enterprises.
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Cloud technologies have seen huge uptake in recent years, driven by the demand for speed, flexibility, scale, and access in business. They are increasingly relying on cloud solutions to achieve benefits that stretch beyond cost efficiency, using it to improve processes and drive business transformation.

“It is clear now that while organisations may have come to the cloud to reduce costs, it’s not why they stay. The true potential of cloud lies in an organisation’s ability to leverage this agile delivery model to transform the business.”

Cloud technologies are evolving rapidly, and businesses need to keep up with latest developments in order to leverage the opportunities that cloud solutions can create for them to improve their business processes and better connect with their customers.

According to a recent IDG study, as many as 69% of large enterprises have either applications or infrastructure currently running in the cloud, which is up 12% from 2012. Respondents to the study said that up to 24% of business IT budget was now being allocated to cloud services, with the highest percentage being allocated to Software as a Service (SaaS) models.

This high uptake trend can also be seen locally in South Africa, with research by World Wide Worx showing that cloud computing usage rates were around 66% in 2014, with 30% saying that they had made ‘significant progress’ in cloud adoption.

Increasingly, businesses are finding that their infrastructure is becoming more software-driven, which in turn makes IT management more efficient. This enables services to be provided more dynamically as applications and cloud computing reduce the need to build proprietary systems and allow companies to move away from legacy issues.

By offering flexible and dynamic IT infrastructure with a guaranteed Quality of Service, cloud solutions can make enterprise IT more efficient, flexible and dynamic, thus allowing a company to be more flexible and competitive in the market.

Cloud computing also enables the mobile workforce by providing on-demand access to a company’s network and data from anywhere, using any device, at any time. This creates an ‘always on’ mobile workforce, which always has the necessary company resources at their fingertips.

In short, cloud computing exists at the convergence of two major IT trends:

1. IT efficiency – where cloud technology is utilised to power increasingly scalable hardware and software resources.

2. Business Agility – where cloud capabilities are used as a competitive tool that provides rapid deployment, parallel batch processing, analytics capabilities and real time mobile integration.

According to a recent study conducted by the Harvard Business Review, companies that are utilising more cloud computing technologies are seeing competitive advantages due to increased business agility. This survey of 527 Harvard Business Review readers showed 70% of respondents had adopted some form of cloud technology with 35% showing a strong belief in the benefits that cloud solutions provide their business.

It is clear from these figures that cloud solutions will have a major role to play in supporting business transformation and the evolution of current business models. Cloud is becoming the key delivery model for the future of IT in business innovation.

Introduction

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1 KPMG – KPMG Cloud Survey Report - 2014
2 IDG – Enterprise Cloud Computing Study - 2014
3 Itwebafrica – Telecom companies will drive South Africa’s cloud market - 2014
4 Business Agility in the Cloud – HBR - 2014
**Public Cloud**

The public cloud is a cloud infrastructure, which is accessed and utilised openly by the general public. It refers to any cloud resource that is available and managed from third-party vendors via the Internet. They are off-premise multitenant solutions that are provisioned in a pay-as-you-go manner and are owned, managed, and operated by a business or academic or government organisation.

The public cloud has a large presence in the private consumer sector as many people utilise personal cloud-based data storage systems or file sharing applications. These products and services are increasingly being scaled and adapted for business use.

**Hybrid Cloud**

A hybrid cloud infrastructure combines elements of both public and private cloud. The discrete elements remain unique but are bound together by standardised technology that enables data and application portability.

According to Oracle, the hybrid cloud will have the highest adoption rate and compound annual growth rate in the medium term, as businesses increasingly use it to modernise their in-house applications while retaining business functionality. Hybrid cloud outsourcing provides the ability to move workloads between the private and public cloud without re-working any key business functions or requiring up front capital expenditure. Businesses will increasingly turn to hybrid cloud solutions to enable scalable business processes that can be paid for as needed.

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**Different Cloud Models**

There are several different cloud models that businesses might enable, depending on their workload, security requirements, how quickly they need to scale, and how much agility they need.

**Private Cloud**

In private cloud, the cloud infrastructure is provisioned for the exclusive use by a single organisation. It can be owned, managed and operated by either the organisation itself or a third-party supplier. It can be on-premises or off-premises.

The majority of businesses still use dedicated private cloud solutions, although more businesses are moving into hybrid cloud solutions as security becomes less of a risk factor.

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Cloud Service Categories

Infrastructure as a Service (IaaS) – this has the capability of providing the client with fundamental computing resources such as processing, storage and networks in a virtual manner. The client does not manage the underlying cloud infrastructure but has control of operating systems, storage and applications.

Platform as a Service (PaaS) – this allows the consumer to host various applications that they have created or acquired without having to manage the underlying infrastructure while still managing the apps and the application hosting environment. The consumer only has control of the application.

Software as a Service (SaaS) – this gives the user access to the service provider’s application, which runs on a cloud infrastructure. These applications are available across all client devices through a web or program interface without the client having to manage the underlying cloud infrastructure beyond his individual user specifications or configuration settings. It provides applications or services that can be accessed from any device.

Cloud service providers will offer these services in various combinations according to the needs of the client. For example, salesforce.com is a SaaS product that also offers PaaS capabilities, which allow the customer to extend and build new functionality.

Enterprise Trends in Cloud Solutions

Leveraging the power of big data analytics in the cloud

With the exponential growth in data that is available to companies, businesses need to find ways to take advantage of the opportunities afforded them through the analysis of this data.

The scalable nature of cloud solutions makes them an efficient way of storing and analysing big data. With increasingly intelligent applications that can sort and analyse data, companies can gain insights into their process or customers, which will allow them to make smarter business decisions and find new revenue streams.

Compliance-ready cloud and improved security

With the increasing amount of sensitive company data that is being stored in the cloud, companies need to ensure that their data is secure. This is seen even more so in industries with high regulation concerning the security of client data such as healthcare and finance. In order for these companies to reap the benefits of cloud solutions while still maintaining the appropriate levels of security, many service providers are offering cloud services that are pre-compliant to industry requirements.

Security in general, is always a major concern for cloud providers that is constantly being improved to the point that many cloud providers can now offer better security than most enterprises have in-house. Soon security will no longer be the main concern around cloud services.

Increasing Adoption of Hybrid Model

The trend of on-premises infrastructure for cloud services is declining as large enterprises realise that it limits scalability and requires large capital outlay compared to off-premises cloud solutions.

By taking cloud services off-premises, a company can free up its internal IT to focus on more core business needs. It also allows the services to be scaled quickly and easily as business needs dictate.

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Bi-Model IT

Gartner recently coined the term ‘Bimodal IT’ to describe businesses that have “two modes of IT” which both develop and deliver information in their own way.

One operates in a more traditional manner, emphasising scalability, efficiency, safety and accuracy. This generally houses the core business functions and is not often migrated into the cloud. The other mode meanwhile is non-sequential, emphasising agility and speed.

By leveraging the power of cloud solutions, businesses have the ability to quickly and easily develop, test and scale new projects before bringing them into the core. It essentially allows a business to launch a mini-digital start-up within the organisation.

The Path to Cloud Adoption

An uncoordinated or ad-hoc cloud service adoption approach can easily negate the benefits of cloud computing in a large enterprise. Without a targeted and strategic path to cloud adoption, organisations can end up with an extremely fragmented IT environment.

In order to effectively migrate to the cloud, a company needs to ensure that it has cloud-specific IT capabilities and all the necessary checks and balances in place to ensure a smooth transition to cloud services.

High level of connectivity

Effective cloud services rely on high-speed connectivity in order to upload and download data in real time. The first requirement of cloud services is therefore good infrastructure around Internet connectivity, with sufficient bandwidth and minimal downtime. This will require appropriate Service Level Agreements (SLAs) from the company’s Internet service provider.

Security

One of the major concerns large businesses have around moving core business processes into the cloud is that of security. While security in the cloud has been improving steadily over the past few years, it is still very important for businesses to ensure the safety of their data. This includes looking at the security credentials of any cloud-based product as well as managing areas such as data access controls and auditing capabilities.

Flexibility of existing IT infrastructure

When implementing cloud technology, it needs to work with the company’s existing IT infrastructure. A flexible IT infrastructure allows for the easy integration of new technologies with existing platforms. This flexibility is categorised by the degree of connectivity, compatibility, and modularity in a company’s IT infrastructure.

A flexible IT infrastructure is therefore defined by the degree to which the existing infrastructure is shareable and reusable.

A flexible infrastructure creates a solid basis for leveraging and integrating cloud solutions into an enterprise. It also supports the use of applications that might not be deployed in the cloud but need to be able to interact with cloud-based applications.

The human dimension

When implementing a cloud-based solution, it is important that it is deployed by competent IT staff. While cloud computing can make many business processes easier and more efficient, they still require specialised IT skills in order to implement and execute them.

It is therefore important to look at the skills of the staff within the IT department and company as a whole. Executing a holistic cloud solution will require technical knowledge and IT skills within the business, as well as managerial IT skills, and business-understanding and problem-solving capabilities.

Corporate culture buy-in

One of the biggest barriers to implementing successful cloud-computing solutions in an organisation is often attitudinal rather than technological. In order to fully utilise the benefits of cloud solutions, there must be top management commitment and organisational flexibility in order to foster an innovation-friendly culture.

An organisation with open communication policies, CEO commitment, organisational flexibility and IT strategy integration will be more successful in implementing an effective cloud solution.

Management Capabilities

In order to implement a successful cloud solution, a company must be able to manage its cloud providers and the associated risks. This includes identifying regulatory conditions, such as those around data privacy and storage, as well as broader vendor requirements, in order to optimise vendor selection and avoid vendor ‘lock-in’.

The company should also have fail-safes and policies in place to handle data loss or system outages.

7 Gartner - Gartner Says CIOs Need Bimodal IT to Succeed in Digital Business - 2014
8 Identifying Organisational Capabilities for the Enterprise-Wide Usage of Cloud Computing. - Neu-Ulm University of Applied Sciences

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Cost reduction

Cloud Computing can eliminate up-front costs associated with IT, instead providing on demand services and infrastructure so that the company only pays for what they use and need. This eliminates wastage and can bring overall IT costs down.

Rapid innovation

Cloud enables better innovation by removing barriers to collaboration while reducing the risks and costs associated with experimenting and testing new products and services.

Cloud is fast, responsive and flexible, which makes it a good place to test and develop new products and services. Once they are critical to core business, they can be brought back out of the cloud into core IT.

Cloud therefore enables businesses to be more responsive to changes in the market and enables companies to get to market faster with new products and services and shortens times for new business launches.

Mobility

Cloud services can be accessed on-demand; they are available everywhere from any device, enabling workforce mobility. The ability to access data and other cloud-based resources anytime/anywhere provides companies with a competitive advantage by helping to facilitate collaboration among team members around the world as well as with other external stakeholders.

Business agility

Cloud solutions can reduce the complexity of IT operations within a company, providing benefits around speed, simplification and communication. The simplification of internal operations results in better delivery of internal resources and a more efficient and connected workforce. This supports the faster roll-out of new business initiatives and the improved ability to acquire, share, analyse and act on data.

The ability to scale

The nature of cloud solutions allows for rapid scaling or de-scaling according to changing business needs or workload demands. It provides unlimited IT resources on demand without having to invest in further infrastructure, on a pay for what you use model.

Challenges of Cloud

While cloud solutions offer many benefits to businesses, it is also important to be aware of the challenges that can arise around cloud computing and mitigate them accordingly.

Security and privacy

The main concern when rolling out a cloud solution is ensuring the security and privacy of the business utilising it. The nature of cloud often results in valuable data residing outside of the company firewall, which can raise serious security concerns.

While these concerns can increasingly be mitigated by more advanced security applications and encrypted file systems, companies must ensure that appropriate safeguards are in place to protect their sensitive data.

Perceptions around the security of cloud solutions are changing however. According to a Harvard Business Review study\(^9\), perceptions around security issues in cloud services are changing with 65% of respondents saying that cloud services can increase security and another 10% saying that the impact on security is neutral.

Service delivery and costs

While cloud services will generally bring down IT costs in a business, due to the decreased need for infrastructure, budgeting and cost assessment for cloud services can be difficult due to the on-demand nature of the service. There is also an increase in cost for bandwidth, which must also have a high uptime and reliability so as not to impede important and urgent business functions.

The service level agreements of the provider must be able to guarantee availability and scalability while still managing service costs to the business.

\(^9\) Business Agility in the Cloud – HBR - 2014
Interoperability and portability

Cloud services can have the effect of locking a company in as it can be difficult to migrate in and out of a cloud system or switch service providers. To mitigate this, companies must ensure that the cloud services they require also integrate smoothly with their own on-premises IT. This enables them to retain a measure of control over the system and switch vendors or services more easily.

Reliability and availability

In order to work effectively, a cloud service needs constant, reliable and fast connectivity. It is important for a service provider to monitor its cloud system around the clock to mitigate against outages or downtime.

To ensure effective cloud services, a company should supervise usage, SLAs performance, robustness and business dependency on the service. By monitoring the performance of its cloud solutions, a company can optimise its usage and manage any business risks.

Telkom | Business Connexion is building a cloud footprint in South Africa that will plug into an international hub of connectivity and has the capability to offer public, private or hybrid cloud solutions to suit the requirement of the customer.

We offer:

Data Centres

We plan, design and implement fit-for-purpose compute, storage and networking technology solutions tailored to your organisation’s business objectives.

Networks

Introduce flexibility and scalability to the infrastructure that delivers information and services to users, both inside and outside your organisation.

We deliver true order-less networks without compromising performance, security or control.

End-User & Mobility

We architect and implement complete end-to-end solutions to empower end-users within your organisations with flexible desktop and mobile technologies to optimise productivity and ensure ease of use.

Our long-standing relationships with key international vendors, coupled with our top accreditations and local skills, ensure that your organisation always has access to the best technology solutions for your requirements.

Collaboration & Communication

Our team of experts can transform the ways your users work, share and communicate.

We deliver the latest tools, technologies and platforms to facilitate real-time communication across your organisation.

Telkom | Business Connexion can offer IaaS, PaaS and SaaS environments to meet a customer’s requirements and offers on-premise, off-premise and hybrid solutions, driven by in-country connectivity, in-country data processing, and data sovereignty.

Telkom | Business Connexion has cloud capabilities that are supported by its national data centre footprint and complemented by a strong network capability, with VPN networks extending into 17 African countries.
Telkom | Business Connexion - Cloud Solutions

Public Cloud

Telkom | Business Connexion Public Cloud is easily accessible over the Internet and meets all the characteristics of a public cloud solution.

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Private Cloud

Our Private cloud solutions offer customers a dedicated cloud platform on the customer’s premises. It is a fully managed solution, and the customer gets the benefits of scaling up and down as his requirements change, while only paying for what is used.

Hybrid Cloud

Telkom | Business Connexion has the capability to configure hybrid cloud solutions based on a combination of its own public and private clouds, as well as the capability of combining international platforms with local public and private platforms. This unique capability puts Telkom | Business Connexion in a very good position to cater for almost any customer requirement.
The Telkom | Business Connexion Key Differentiators

Telkom | Business Connexion is one of the largest ICT services providers in Africa with a clear focus to serve the enterprise, public sector and SMB market segments both in South Africa and across Africa.

Our passion is to seamlessly connect every business towards a digital future. Our solutions are offered end to end — ensuring that your business benefits from every economy of scale and superior service quality.

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<th>Unmatched Data Centre and Network Infrastructure</th>
<th>3 Tier IV designed data centres, 147 000 km of fibre, 2 600 LTE and 3G base stations throughout South Africa.</th>
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Migrate your business into the digital future — contact Telkom | Business Connexion today!
Glossary of terms

3G – Third-generation wireless telephone technology
B2B – Business to Business
B2C – Business to Consumer
B2E – Business to Employee
BAS – Business Advisory Services
CSB – Cloud Services Brokerage
IaaS – Infrastructure as a Service
IT – Information Technology
ICT – Information and Communications Technology/ies
IM – Instant messaging
IoT – Internet of Things
IP – Internet Protocol
IPI – ICT Planning and Integration
JDA – Johannesburg Development Agency
JSE – Johannesburg Stock Exchange
M2M – Machine to Machine
PaaS – Product as a Service
PBXs – Private Branch Exchanges
PoP – Point of Presence
PoS – Point of Sale
QoS – Quality of Service
RSM – Risk Service Management
SaaS – Software as a Service
SAP – Systems, Applications and Products
SI – System Integration
SLA – Service Level Agreement
SMS – Short Message Service
UC – Unified Communications
Telkom Business is a division of the Telkom Group organisation. We exist to serve the South African and African corporate; government and SME markets. Our passion is to seamlessly connect every business towards a digital future. Our solutions are offered end to end — ensuring that your business benefits from every economy of scale and superior service quality. Our solutions are customised by taking into consideration the role of the relevant technology trends; such as: fixed mobile convergence; mobility; machine to machine; big data; Wi-Fi; broadband; LAN; WAN; cloud computing; unified communications; digital and social media and others.

Migrate your business into the digital future — contact Telkom Business today!

Business Connexion is one of the largest ICT services providers in Africa when measured in terms of turnover, assets under management and staff complement. It remains one of the leading South African cloud-based services providers with offices in South Africa, Namibia, Nigeria, Mozambique, Tanzania, Zambia, Kenya, Botswana, the United Kingdom and Dubai. The company employs more than 6 800 people on the African continent and generates revenue in excess of R6 billion a year.

For more information, please email tbsm@telkom.co.za
www.telkom.co.za/bigbusiness