Cloud and VPS Hosting Services

Creating Value for businesses across the globe

BOSS HOSTING

GLOBAL TECHNOLOGY SOLUTIONS

BOSS Hosting – Value proposition whitepaper.

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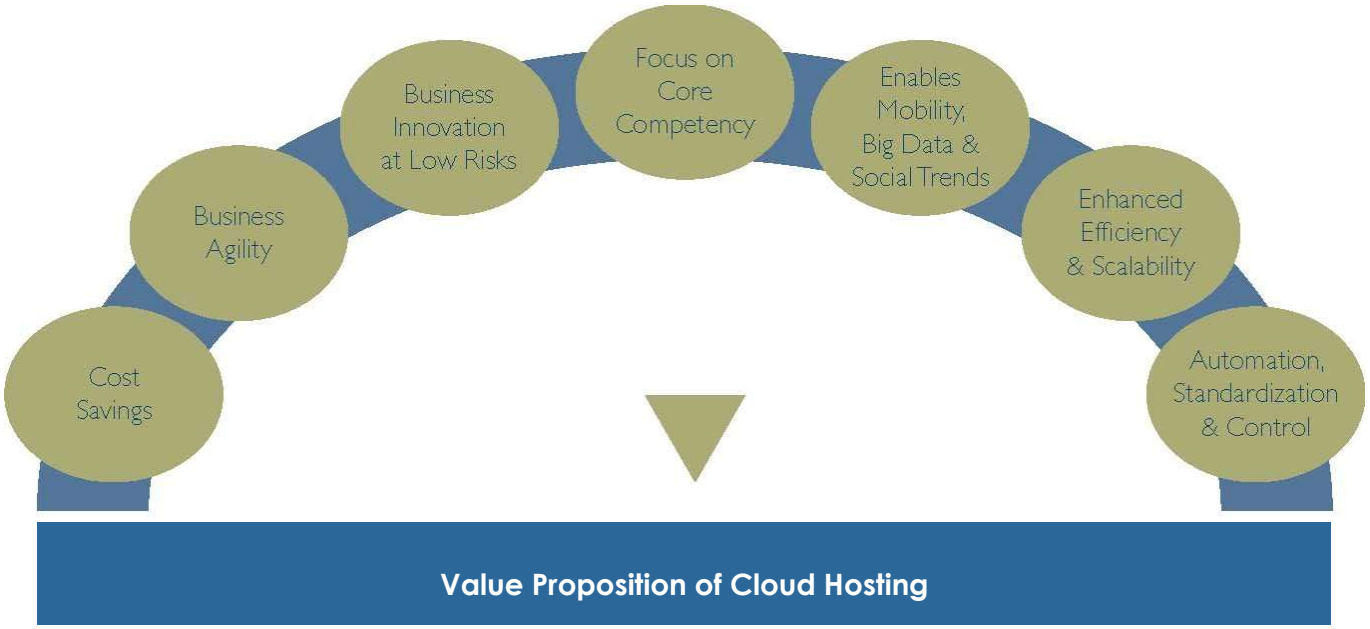
INTRODUCTION TO CLOUD COMPUTING

Bosshosting defines cloud computing as a flexible and scalable IT environment in which service providers leverage virtualization technologies to create and distribute computing resources to customers on an as-needed basis, through a private or public network and where the service is priced according to a per-use basis.A variety of services are delivered through the cloud, commonly classified under three broad service offerings – Software as a Service (SaaS), Infrastructure as a Service (IaaS) and Platform as a Service (PaaS).These services offer several value propositions to consumers, summarized in the figure below.

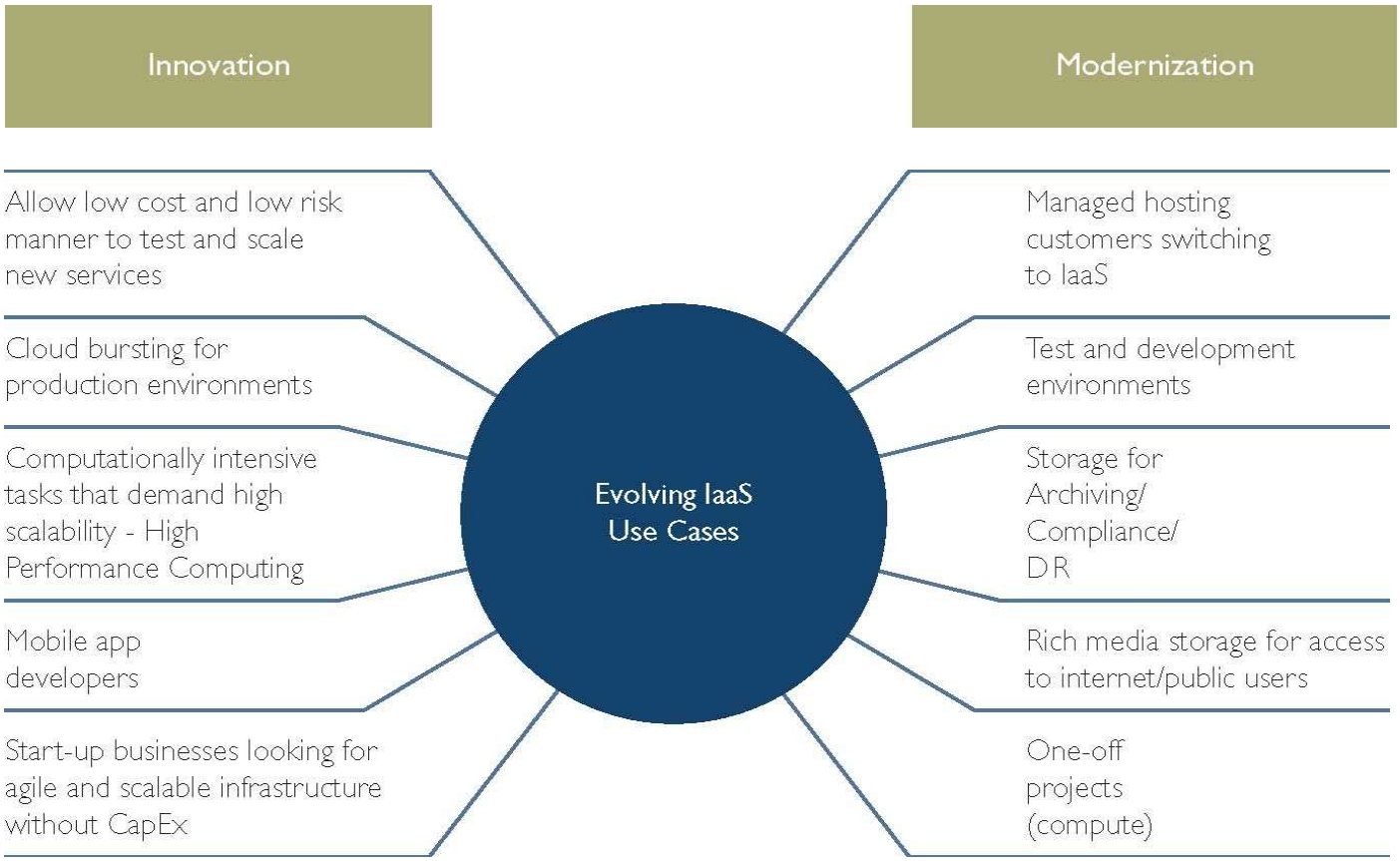
Figure 1: Value proposition of Cloud Computing



ADOPTION OF CLOUD COMPUTING

The global cloud computing market is expected to reach approximately US$186 billion in 2019 from an estimated US$36 billion in 2013, growing at a compound annual growth rate of 33.4%.While SaaS continues to be the most popular cloud service offerings with users, IaaS is witnessing growing adoption and is expected to grow at 40% per annum for the 2019-2021 period.

The adoption of IaaS is currently being driven by specific usage scenarios as highlighted in the following chart.



According to a recent Frost & Sullivan and Fujitsu enterprise survey with 310 technology decision makers in major technology markets of Australia, France, Germany, Singapore, the UK and the US, prospective users of cloud computing solutions across the globe have a broad level of understanding for what a cloud is. For example, US enterprises are especially confident about their knowledge related to the cloud solution, with 74.0% of them emphasizing their understanding of the three different types of cloud deployment methods. This finding is mostly because enterprises in the United States were early adopters of the cloud and have had more exposure to this technology than the rest of the world. However, a large percentage of enterprises are not clear about the difference between a private, public, and hybrid model. Singapore's, Africa, and France's markets exhibit the least understanding, with 69.2% and 76.4%, respectively, expressing uncertainty.

The availability of numerous cloud offerings in the market, ambiguity regarding choice of cloud models, and the process involved in cloud transition complicate the decision-making process regarding cloud implementation for a large number of enterprises. Of the enterprises that responded, 58.7% revealed that they found cloud-based decisions to be particularly complex.

BossHosting aims to offer flexible and agile cloud offerings to the South African market. With experience in Cloud market leaders such as Micrrosoft Azure , Amazon Web services, and Google cloud, we have built our service offering to closely match

the unprecedented High availability , Seamless deployment, Managed services, and total ownership of infrastructure as a service once present in our datacentres.

To further drive Private cloud and infrastructure as a service, Bosshosting employs highly certified solutions architects, specializing in on premises infrastructure and services, to cloud hosted infrastructure as a service migrations.

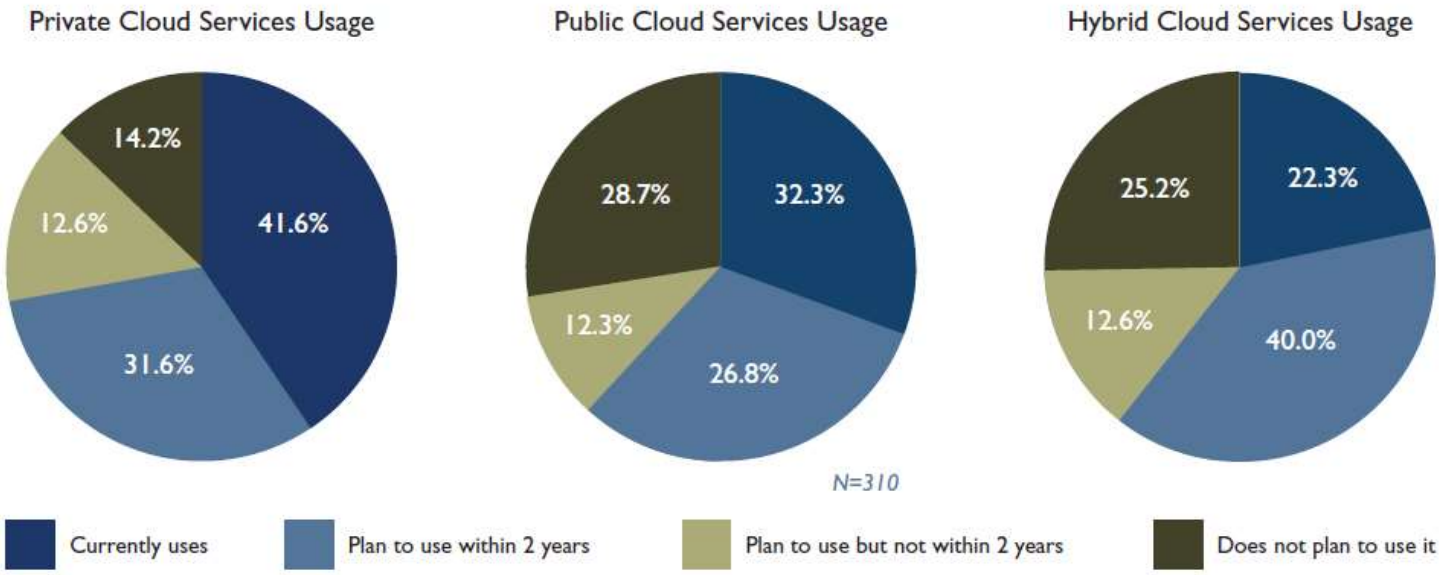
WHICH CLOUD DEPLOYMENT MODEL IS RIGHT FOR YOU?

Cloud computing isn't a one-size-fits-all undertaking. It can be delivered through several service delivery models and multiple services can be provisioned over the cloud. It is essential to understand these different forms of the cloud and identify the right approach for your organization. There are three cloud deployment options available to organizations today, namely private cloud, public cloud, and hybrid cloud. These three cloud deployment models have certain similarities and differences, and it is essential to understand these aspects when evaluating a move into the cloud and selecting the right cloud deployment model for an organization.

Figure 5: Comparison between Cloud Deployment Models

Parameter	Private Clouds	Public Clouds	Hybrid Clouds
Data Storage	Data Remains within a secure enterprise environment	While customers may have a choice of data centre location, its storage continues to remain opaque to end users, raising security and regulatory concerns	Data are divided between a secure hosted environment and a public environment based on criticality and regulatory compliance
Infrastructure	Dedicated infrastructure	Primarily in a multi-tenant, shared environment	A mix of dedicated and shared infrastructure
SLAs	Robust SLAs that are only limited by skill levels and processes of the provider	- Standardized SLAs with compensation limited to service credits - May not meet the exacting requirements of enterprises	Flexible SLAs as per requirement of enterprises
IT Team	Internal IT team / On-demand IT staff of service provider	On-demand IT staff of service provider	Access to internal IT team as well as service provider IT staff
QoS	Private networks offer better QoS through pre-defined SLAs	Public Internet has less reliable QoS	Ability to choose the relevant networks as per requirement
Cost	Expensive (as compared to a public cloud)	- Predictable OPEX - Inexpensive	- Mix of C APEX and OPEX - More cost effective than private clouds
Suitable Workload	Mission critical applications with demands for high security and low latency, and custom service levels	Elastic workloads; Development and Testing; Analytics;VDI; Mobile/Social apps; custom apps	Workloads with regulated data or to ensure data sovereignty but need elasticity and agility such ERP; business intelligence solutions;VDI; custom apps

Figure 6: Usage preferences of the Cloud Deployment Models, Global, 2012



- *A large percentage (41.6%) of enterprises mention that they use private cloud services.*
- *At a regional level, more than half of the enterprises in UK and US point out their current involvement with private cloud services.*
- *The public cloud services model has the highest percentage of enterprises who do not plan to use it in the future.*
- *This is largely because of the security and performance concerns attached to the public cloud service model.*
- *52.0% of the enterprises in the US currently use this model, which is the largest proportion of users among all the other countries.*
- *22.3% of the enterprises are currently using the hybrid cloud service model. This points to the low prevalence of true hybrid cloud offerings in the market.*

Source: Frost & Sullivan

Figure 6, above, illustrates the usage preferences of the different cloud delivery models across the globe. Among the three cloud delivery options, private solutions were found to be most commonly used. Enterprises exhibit the greatest interest in the future use of private and hybrid solutions, while security concerns cause them to be more hesitant about public cloud solutions.

Among these three cloud deployment models, public clouds offer significant cost savings for users along with elimination of CapEx, reduction in infrastructure management and access to latest in technology. This has translated into availability of enterprise class IT infrastructure to businesses that could not afford this before.SMBs today can have the same infrastructure, SLAs and performance as their larger counterparts, enhancing productivity and business efficiency. While the initial adoption of public cloud services was dominated by test and development, and non-core applications, enterprises are increasingly gaining confidence in the public cloud deployment model and migrating a greater number of applications to public clouds. Public clouds are also being increasingly considered for disaster recovery and business continuity planning being completely independent from the current IT environments. This allows enterprises to take risks and innovate to bring out new solutions or expand into newer markets/geographies as there are no upfront capital investments. These aspects are leading to a shift in the role of the IT department and the CIO into internal service providers or "Cloud Enablers "where they look to aggregate, integrate and manage cloud and non-cloud services in a seamless manner. For the business unit, it enables faster Innovation without increasing overheads or reducing the flexibility.

Furthermore, there is a wide reaching impact on consumers of technology such as marketing teams or the Chief Marketing Officer (CMO). The CMO now has greater flexibility from IT to run their ad-hoc marketing campaigns with significantly lower apprehensions about its return on investments as they can request, or in fact self-procure, software solutions or virtual machines to run their campaigns on a pay-per-use model. This is allowing them to take bolder steps towards marketing and experimenting with their marketing approaches.

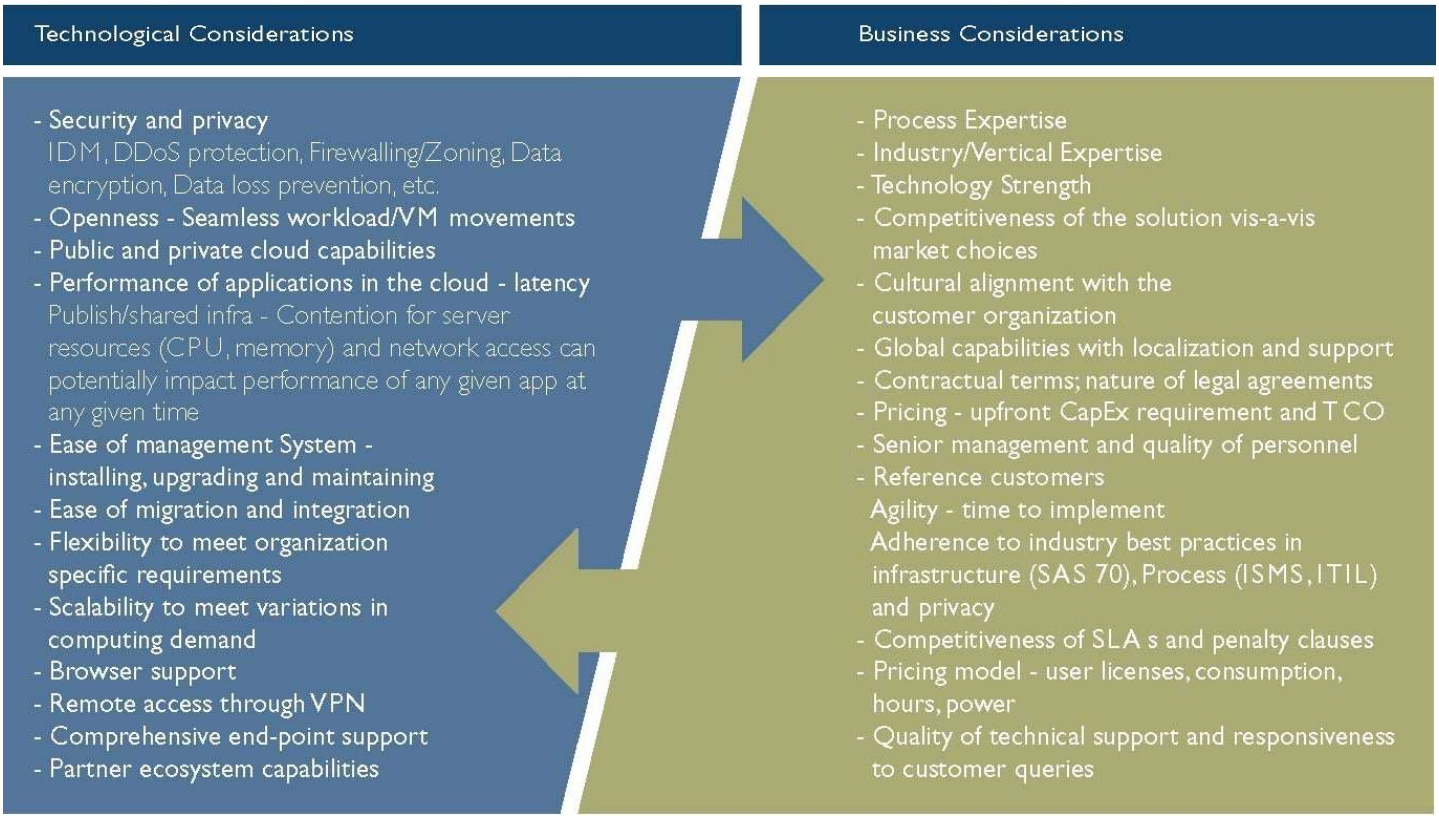
Figure 7: Advantages of Public Cloud

Once enterprises reach a certain level of maturity in the adoption cycle, it might become necessary for them to go beyond the public cloud and also include private cloud into their cloud solution portfolio, in the purpose of better distribution of workload without significantly increasing IT budget. Hence, Bosshosting expects that most enterprises in the future will move to a hybrid cloud environment which allows users to get benefits of both the cloud services and traditional IT delivery models giving rise to "Cloud Integration". Hybrid or cloud integration deployments feature a mix of on-premise and off-premise resources managed through one easy to use application / web portal. All critical and compliance related data may be stored on the on-premise network, while the non-core applications may be moved to the off-premise location. This mix creates an attractive value proposition for the customers and is driving increasing adoption across the globe in a long run.

WHICH CLOUD SERVICE PROVIDER SHOULD YOU CHOOSE?

Having identified the distinctness of the three cloud delivery models and why enterprises will choose a mix of traditional and cloud delivery models to meet their business requirements of today, it is also essential to identify the right cloud service provider to meet your business' requirements. Organizations' choice of cloud providers depends on several factors. Most companies point out the significance of partnering with a provider who has solid experience in the market and has prior relationship with the company. However, a cloud provider offering services that suit the existing infrastructure and activities of a company, is ranked the highest.

Figure 9: Technological and Business considerations when selecting a cloud provider



The above criteria may be adopted as the guidelines in the cloud provider evaluation. The decision makers need to identify the criteria that are most important for their business requirements and judge the various different service providers on a mix of these. These criteria should essentially lead to the service provider offering the best-in-class security and privacy; performance; availability; and customer service and support.

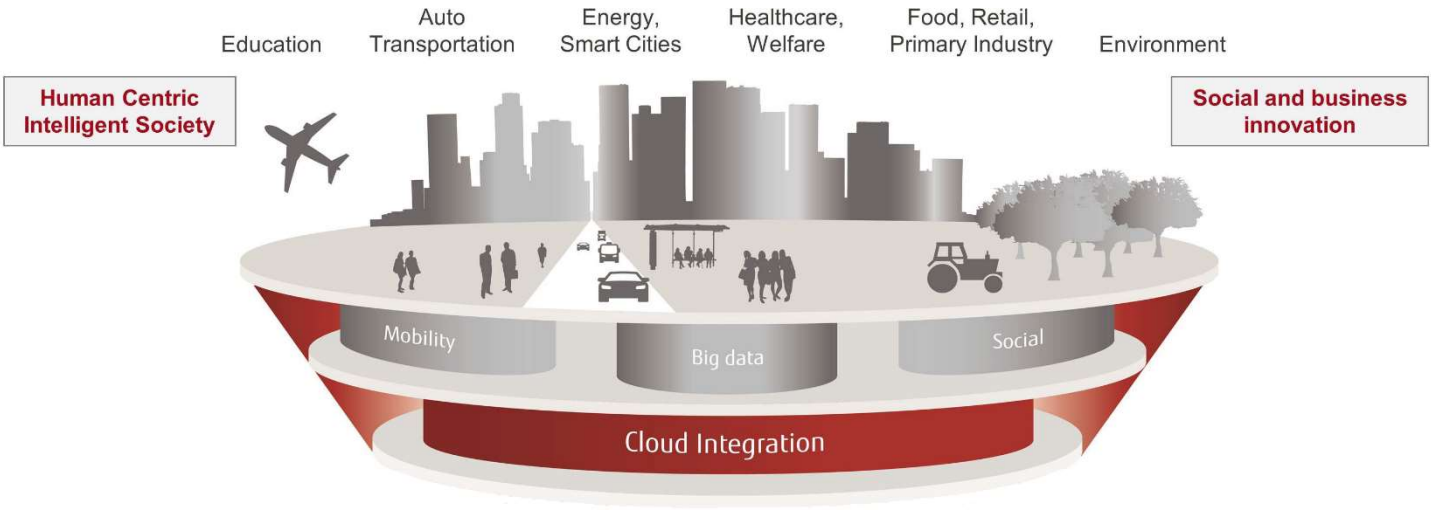
BOSSHOSTING'S VALUE PROPOSITION AS A CLOUD SERVICE PROVIDER

Human Centric Intelligent Society and Bosshosting Cloud Initiative

Boss hosting, although relatively new in the Cloud space, adopts the cloud business model of leading providers of IT services and solutions across the globe. The company has a vision for the future and believes that human centric ICT (Information and Communication Technology) can help create a more intelligent society, a better place for human beings and a better place to conduct our business and create a sustainable place to live and prosper. Human centric ICT is the style of technology to empower people, aligned to needs. It connects everything and harnesses information to create value. It gives knowledge anywhere, anytime. It encourages people to innovate. It is the fusion of advanced technologies encompassing cloud, mobility, Big Data, the Internet of Things and more.

Bosshosting wants to use the power of human centric ICT to drive a safer, more prosperous and sustainable society. A society where knowledge is continually harnessed for encouraging people to innovate. Bosshosting calls this vision a human centric intelligent society and positions cloud as underpinning of innovation.

Figure 10: Bosshosting Cloud – Underpinning Innovation

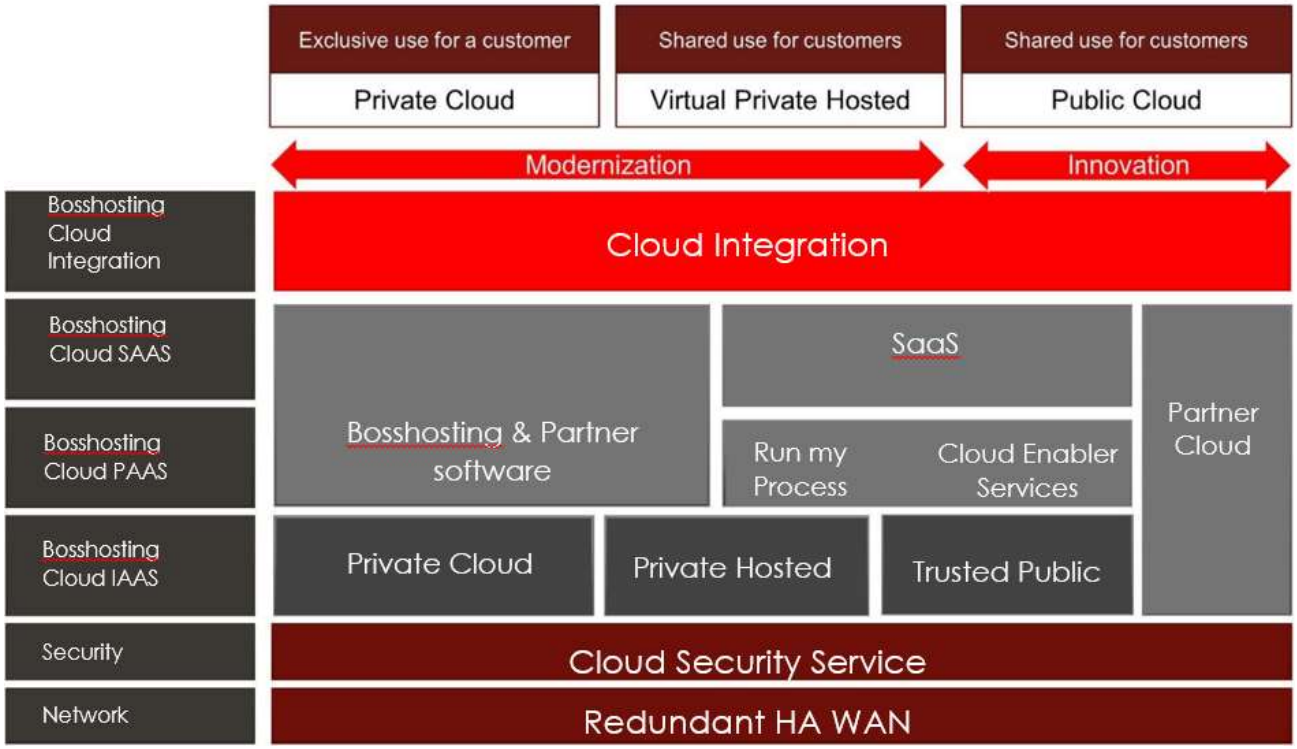


Since founded, Bosshosting has strived up its cloud computing capabilities with its Multiple redundant datacentre, and DR hosted Physical hardware, in established Tier 3 hosting facilities, building on its existing strengths, strong consulting expertise, and implementation and integration excellence. Today, Bosshosting has one of the broadest cloud portfolios on offer in the South African market. Its cloud portfolio is built on integrating its own and third party solutions to create a seamless end-user experience which encapsulates mobility, big data and social themes to create

solutions that meet the demands of businesses across verticals. Bosshosting offers a mix of public and private cloud infrastructures tailoring to specific business needs, together with its cloud integration services, providing unique value propositions to its customers. The company is currently serving more than 80 companies with its cloud services portfolio through its 3 cloud centres in Southern Africa.

Our vision is to grow our client base by 1000 Companies, and 10 highly available Centres by 2022.

Bosshosting Cloud portfolio offers the following services:



BossHosting underscores two offerings among our cloud computing services – the IaaS Trusted Public S5 (TPS5) and the Cloud Integration Platform. These solutions allow our customers to embark on a cloud adoption journey where they start off by moving their test and development environments into the TPS5 offering and get accustomed to working in the cloud. This may be followed by migrating production workloads suitable for a public cloud environment into TPS5 and other, more sensitive or mission critical workloads, into the TPS5 Dedicated cloud. Though the journey, customers gain confidence in cloud computing, leverage best-in-class IT infrastructure; and try out innovative new ideas and services. The next stage in the journey assists the evolution of the CIO and the CMO as highlighted earlier by allowing them to tap into Bosshosting's extensive product portfolio. All the different pieces of enterprises' cloud environment come together through the Cloud Integration Platform. It allows enterprises to manage their entire IT environment – cloud or traditional – through a cloud integration. It can become the underpinning platform for your organization in exploring new services and introducing a new breed of apps as Bosshosting partners with you on your cloud journey.

The value proposition of the IaaS TPS5 lies in the ability to provide a range of options for users to customize to their exact needs. For example, users can choose their level of compute services, options for network services – global IP address, server load balancing, etc and from a range of storage services. Enterprise customers are looking for best-in-class security and privacy; performance; availability; and customer service and support from their cloud service provider.

Security and Privacy

Concerns around security and privacy related to access, storage and retrieval of data have been the major roadblocks in cloud adoption. Security is inbuilt at every level of the service – in accessing the portal, in accessing the applications, at the network layer, at the data layer and in the data centre. Key security features of the solution include authentication/ID management, access control, encryption and key management, and audit trail management. Furthermore, our redundant data centres allow enterprises to choose where their data should be located.

Performance

As the cloud computing landscape is maturing, businesses are expecting high performance environments from cloud services. It is essential to have at least the same experience from the cloud as from self-hosted environments. Bosshosting offers virtual machine performance guarantee, which translates into steady performance of machines eliminating the noisy neighbour problem. This has been achieved through an intelligent cloud orchestration platform. Also, the ability to choose the data centre where the data resides can help reduce impacts of network latency and jitter due to distance.

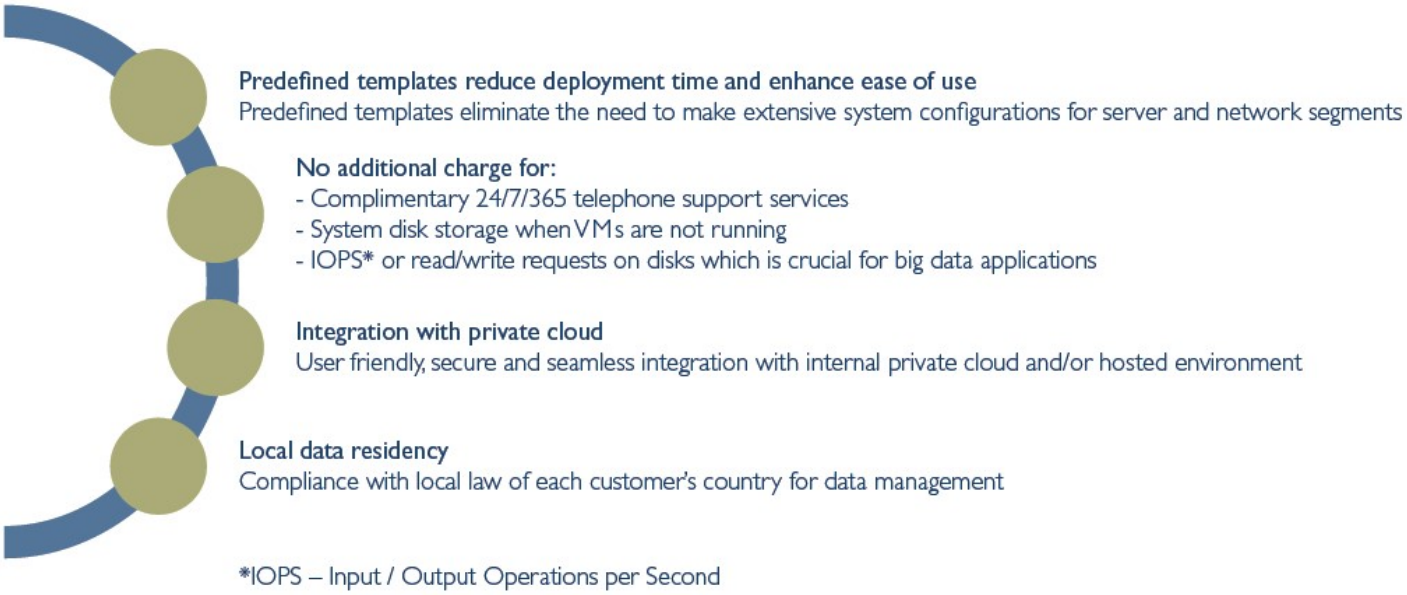
Availability

The availability of cloud services at all times is also a critical factor in choosing a cloud service provider as down times/outages may lead to loss of productivity and revenues. Bosshosting ensures high availability through mirroring and establishing full redundancy at all points of failure – component / device / network. The SLA for this service is committed at 99.95%, excluding maintenance time.

Customer Service and Support

Ultimately, there will be occasions when even the most stringent of availability SLAs fail. Or your IT team needs assistance in integrating a newly deployed IT tool. This is when customer service and support can make the difference. While the IaaS TPS5 is based on a self-service model, it is backed by round the clock monitoring to provide stable environment and ensure SLAs are met. Also, Bosshosting has in-house experts that can advise and support enterprise customers on their cloud journey from roadmap creation to implementation.

Figure 12: What differentiates Bosshosting Iaas?

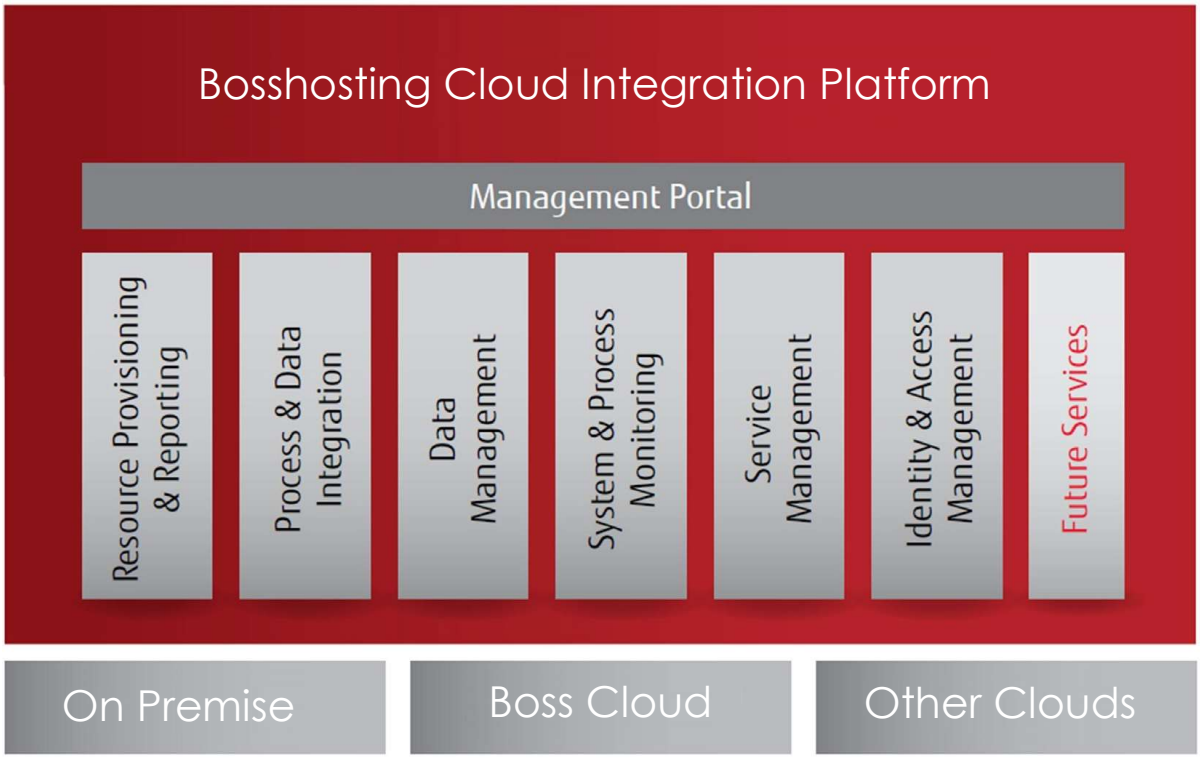


CLOUD INTEGRATION PLATFORM

Ensuring smooth functioning of IT by bringing together disparate environments

Another key strength of Bosshosting cloud offerings, is the Cloud Integration Platform, which allows users to use multiple clouds. It is targeted at enterprises that are looking to significantly increase their use of cloud services in order to drive innovation and leverage the three technology mega trends – mobility, social and big data.This platform provides a range of services including the following:

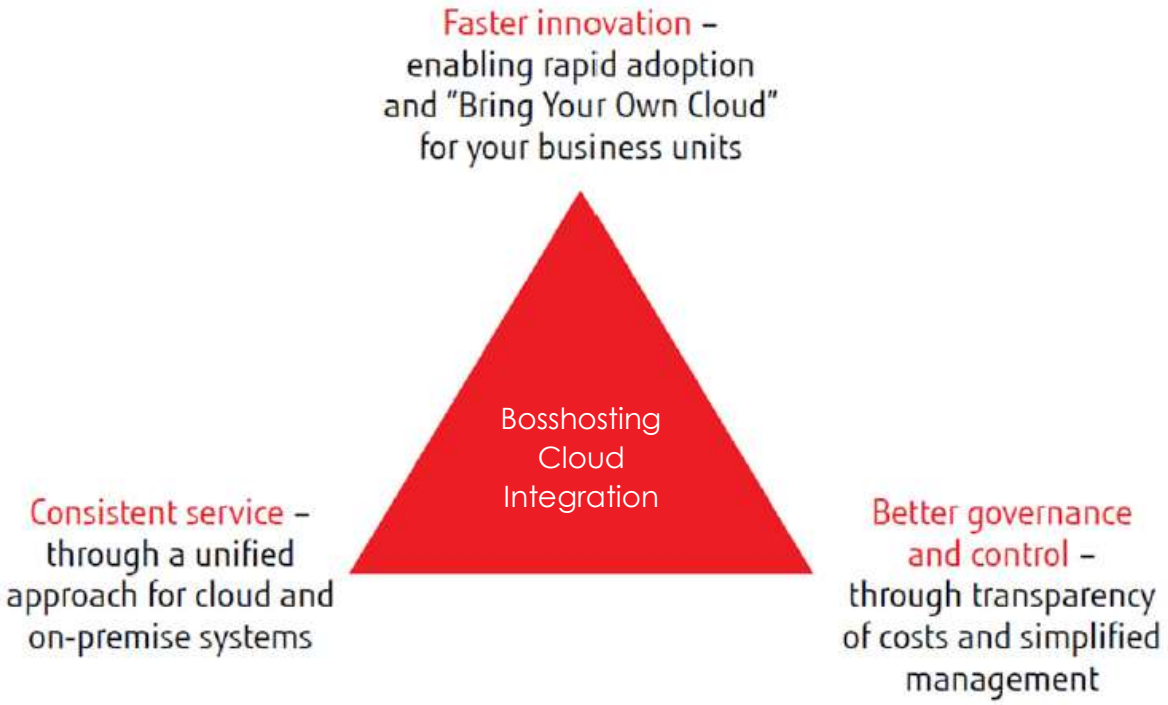
Figure 13: Bosshosting Cloud Integration Platform



Along with customers' business growth, in most cases enterprises need to manage a much more complex working environment which may include on-premise infrastructure, private and/or public cloud provided by Fujitsu, as well as other clouds. The Cloud Integration Platform provides excellent cloud management, cloud integration and cloud aggregation. Through our Cloud Integration Platform, Bosshosting is in the right position to become a trusted partner for its existing customers and also potential customers on facilitating their business expansion. It simplifies adoption of cloud services by ensuring that the necessary governance and operational controls are in place without increasing complexity or reducing the flexibility for the business units to choose the cloud services they want. It provides the functionality you need to aggregate, integrate and manage cloud service alongside non-cloud and traditional ICT services in a consistent manner.

The value proposition of the Cloud Integration Platform can be encapsulated as follows:

Figure 14: Bosshosting Cloud Integration Platform – Value Proposition.



THE LAST WORD

The information and communication technologies (ICT) industry is undergoing a paradigm shift in the way computing resources are procured. Cloud computing is emerging as a key area of focus for business leaders and technology decision makers due to its support for driving innovation; its ability to save costs; increase business agility and deliver IT in an on-demand manner. Indeed, the use of cloud services has increased significantly over the last 24 months with more than half the enterprises today using cloud services in one form or the other. Among the various cloud deployment models, public cloud is the best choice to start the cloud journey, as it allows enterprises to develop and test new services at low risk with minimum cost. It has emerged as a useful tool to enable enterprises' infrastructure modernization, cost optimization, as well as business/service innovation. In today's competitive environment, business units need to innovate to not only thrive but, survive and the CIOs need to modernize their ICT to be able to respond to business needs. Once enterprises mature in the cloud adoption cycle, they can opt for a mix of public and private cloud, and traditional IT environment to better facilitate the business expansion process.

Bosshosting has established itself in the South African cloud computing market with its diverse portfolio and attractive cloud offerings, in spite of the high competition. Bosshosting's Cloud Initiative is redefining the cloud landscape – it allows for management of cloud and non-cloud services and is available on-premise or on the cloud. Bosshosting's solutions leverage the company's existing cloud centres and over 12 platforms, well-trained support services, innovation expertise and market leadership in cloud services. Given an end-to-end cloud services portfolio and unique value propositions, enterprises should definitely consider Bosshosting when evaluating cloud service providers. We can be your partner throughout your cloud journey from adopting public cloud solution to moving to a complex IT environment which is underscored by its deep integration capabilities.

About Bosshosting

Bosshosting is a newly formed, Up and coming information and communication technology (ICT) company offering a full range of technology products, solutions and services. Our team support customers in more than 17 locations around Southern Africa .We use our experience and the power of ICT to shape the future of society with our customers.

For more information, please see http://www.bosshosting.co.za

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Bosshosting, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. Since Inception, we have been developing growth strategies, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies?

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