CLOUDY CONDITIONS
ARE FORECAST FOR
PARTS OF AFRICA OVER
THE NEXT THREE YEARS.
AS THE HYPE AND
EXCITEMENT AROUND
CLOUD COMPUTING
BUILDS, THERE ARE
MIXED FEELINGS
ABOUT ITS VIABILITY
ON THE CONTINENT.
BY KERRY DIMMER

Weather
report

Larry Ellison, CEO and co-founder of Oracle Corporation, has said that cloud computing is not only the future of computing, but that it's the present and the entire past of computing. Ellison believes that although it's not really new technology it's a term that's being bandied about as though it's revolutionary.

Some agree with him when he says its all nonsense – that all it is, is a computer attached to a network with applications for rental; that what was called 'the internet' is now called 'a cloud'. But no matter what Ellison thinks or says about cloud computing, it is significant and it couldn't have emerged at a better time with the economy as unstable as it has been.

Cloud computing originated from the concept of building huge scalable websites that would not just respond immediately, but accurately – Amazon.com for example does exactly that, so too does Google. What it has morphed into is a service that delivers hosted applications over the internet and acts as a vehicle for infrastructure as a service (IaaS), platform as a service (PaaS) and software as a service (SaaS).

IaaS is essentially the supply, by a service provider, of equipment used to support organisational operations such as storage, hardware, services and networking components. PaaS is the delivery of operating systems without the need for download or installation, while SaaS refers to applications that are hosted by vendors and made available to customers over a network.

Essentially there are four distinct characteristics that differentiate cloud computing from traditional hosting: it is sold on demand by the minute, hour or monthly licence; it is elastic enough to be customised to individual needs across a broad spectrum of business operations; the provider manages the services; and there is no need for huge capital expenditure on, for example, software and IT experts or outsourcing.

While there may have been fears that cloud computing would destroy businesses – not dissimilar to those anxieties in the early days of open source software – the reverse is in actual fact true. It has opened the door to new business creation and has shifted the way existing companies conduct operations and run software. They now all have their heads in the cloud, so to speak.

Africa, as Kendal Watt of Mimecast South Africa points out, has a large appetite for cloud-based services, in particular Nigeria, Ghana, Rwanda, Mozambique, Botswana and Mauritius, but unless internet infrastructure is in place, it will be pointless.

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'There are serious concerns regarding the continuity and delivery of energy and power, particularly for the mining, construction and financial services industries. Most African mining companies are separated by vast distances and realising communication between them is both expensive and difficult to implement, particularly from a connectivity point of view. Services on demand make so much sense for them provided, of course, that they can at least access 3G capability.'

Cloud computing makes a lot of sense too for educational facilities, particularly schools. The simplicity of operation without the need for complicated networking, data storage and the use of free applications is a real boon for cash-strapped African countries.

This is all good and well but even 3G connectivity is a problem in large parts of Africa, including technology-savvy South Africa. The cost-savings synonymous with cloud computing will mean nothing if Africa is hampered by the lack of available bandwidth which in turn affects the use of cloud computing to educate and train those who need to use it.

Telecoms will improve, however, once the Main One submarine cable comes on-stream this year, delivering 1.92 Tbps of bandwidth to 250 million people along the west coast of Africa from Morocco to Angola. The Seacom undersea fibre-optic cable along the east coast is proving somewhat effective in South Africa, Mozambique, Tanzania, Kenya, Djibouti and Egypt.

Of these developments, Matthew Tagg, CEO of Web Africa is optimistic but realistic. 'It's a slow process. We are probably five years behind the US in terms of cloud computing and perhaps

it's coming to Africa before its time. It's on the cusp of being very viable, but other things need to be in place first, such as more reliable broadband with higher per capita penetration. But it will prove itself, of that I have no doubt.'

South Africa has embraced SaaS at local government level, as have many JSE-listed companies. Watt says that such organisations, which include mining giant Goldfields, financial services company Sasfin, the Gauteng Shared Service Centre, and South African telecoms regulator Icasa are looking at business continuity and sharpening up communication environments in preparation of the Electronic Communications Act gaining teeth. 'Customers such as these choose to err on the side of caution when it comes to regulatory requirements, as all directors have certain fiduciary duties to shareholders, so records retention and safety is of critical importance.'

This of course is a bit of a worry. With the host cloud providing the service, security issues have been questioned. IT research and advisory company Gartner has exposed five main risks to cloud computing, namely: testing; data location; data and code portability; data loss; and data security.

But as Tagg points out, these risks are the same whether they are undertaken by employees of the company or an outside resource. 'Cloud hosts have actually proven to be better at managing security risks or leaks. The bigger issue is getting past cross-border legal issues. American legislation, for example, may conflict with what is trying to be stored by an operation in another country.'

Watt confirms this and warns that chief information officers and IT managers need to be aware of regulations such as Sarbanes Oxley and the Patriot Act in order to ensure that they stay on the good side of their customers.

'Throughout the world the trend is for business to move into a more litigious type of society. As a result there is more discussion around data security and corporate chains of custody. Because these are high on the list of priorities of cloud service vendors, it makes absolute sense for African organisations to make use of these suppliers.'

As businesses in Africa become more sophisticated and the use of the internet and email becomes more pervasive, interest in cloud computerisation is building. But not all clouds are created equal. What business operators need to look for are vendors that offer true scalability from grid computer architecture. The platform should be developed and managed by the provider with a single code-set which offers a multi-tenant platform and, most importantly, the spend on bandwidth should reduce costs, not increase them.

'If you are going to put all your eggs in one basket,' says Tagg, 'you need to ensure that the cloud vendor has a solid reputation and for now its going to be a bit of a stretch to find a proven Afrocentric cloud platform.'

One international platform called Azure, offered by Microsoft, is changing the way schools in Ethiopia operate. The government has started the roll-out of 250 000 laptops to teachers countrywide which will allow them to download the national education curriculum, keep track of academic records and transfer student data securely. A data centre of this nature would have taken months, let alone a substantial amount of money, to build without the cloud. Instead, within weeks a system such as this can grow to tens of thousands of users.

So, while for some cloud computing may be a relabelling of what was already out there, for those Africans who have never had an expectation or the opportunity, cloud computing provides the means with which to interact with the rest of the world in ways they never imagined. It's going to change lives. It's certainly changed the way we think about operating systems and the way we run software. Think about that Larry Ellison.

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