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# Reading the runes

With 2015 drawing to a close, *Information Age* takes a forward-facing look at the coming year and asks industry experts what they think is just around the corner for the storage world in 2016



*Convergence of the storage market will continue at pace*  
– Rani Osnat, VP strategic marketing, CTERA

As the recent announcement of EMC's acquisition by Dell demonstrates, storage as a stand-alone proposition is becoming less viable as compute and storage systems converge, and as cloud architectures are changing the way organisations consume storage – despite the growth in capacity needs.

As storage hardware is being commoditised or converged with computing platforms, the 'bigger, better, faster' game will give way to tools that make storage easier to provision and manage, and more responsive to user demands.

It's going to be less about infrastructure and more about the speed and ease with which services can be provisioned, and how cost is optimised per use case.

*Software-defined storage built around open-source solutions will continue to face confusion in the market*  
– Tarkan Maner, CEO, Nexenta

Looking ahead to 2016, there can be little doubt that the market will continue to see an increase in the



**'It's going to be less about infrastructure and more about the speed and ease that services can be provisioned, and how cost is optimised per use case'**

>> Rani Osnat, VP strategic marketing, CTERA

uptake of software-defined storage (SDS), but open source-driven solutions will grab the most attention.

For one, these solutions are continually evolving for the better, driven by a growing collective of

talented and dedicated developers and resources.

Equally, by the sheer nature of design, being 'hardware agnostic' means that these solutions are easy to integrate with existing infrastructure, where heavy investment has already been made and need not be squandered.

That said, confusion around what SDS means still abounds. It can mean different things to different people. With solutions ranging from do-it-yourself to fully fledged scale-up and scale-out architectures, all too many businesses face a confusing landscape.

Going forward, SDS providers must move to tackle this 'pain point' head-on. Only by mapping each potential solution with its corresponding environment in the business environment can they illustrate how moving to embrace the technology sooner rather than later is a must and isn't as daunting as it seems.

*All-flash arrays will dominate the primary storage market, while SDS will remain on the sidelines*  
– Kevin Linsell, director of strategy and architecture, Adapt

All-flash arrays with inline data reduction (deduplication and compression) have had a significant



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**‘Tiering will be a key focus of 2016, but how will you decide what resides on what storage?’**

>> Chris James, marketing director EMEA, Virtual Instruments

impact on the costs of delivering certain high-performance workloads.

As the cost continues to fall and the features develop to become on par with traditional storage, I predict that the days of disk as a primary storage technology are limited.

Software-defined storage is where a software layer manages the underlying storage capabilities and in many cases allows mixed storage systems, including commodity disks, to be integrated into

an overall storage system.

As part of the software-defined data centre, this promises much, but in reality the complexity and cost of additional software layers can be off-putting. When implemented well and at scale, it will deliver significant operational benefits.

As the technology matures and finds its way into more mainstream services, developers will be able to leverage the presented APIs to embed storage functions directly within their application.

But all-flash arrays will definitely dominate the primary storage market. SDS will remain the domain of the service provider and very large enterprises. Interoperability between different software-defined storage systems will be its downfall.

*However, organisations will have a reality check when it comes to flash's limitations*

– Chris James, marketing director EMEA, Virtual Instruments

The landscape is changing. 2015 saw the mass adoption of flash, but many buyers are finding that, like Volkswagen emission statistics, what they were promised in terms of performance and what they are getting are two different things.

Flash is great for some applications but certainly not all. It is also not the panacea for backup and archive.

Tiering will be a key focus of 2016, but how will you decide what resides on what storage? The answer is infrastructure performance management (IPM) – the ability to look at the whole infrastructure, not just the storage in isolation, and see how applications are utilising each element and how fast they are running in and out of the data centre.

Flash will continue to grow but will be implemented where performance is lacking rather than everywhere. IPM platforms will baseline application performance and utilisation, allowing admins to balance load and invest intelligently, rather than throwing flash capacity everywhere.

*Solutions that can help ensure the reduction of storage requirements and complexity will also be key*  
– David Ellis, head of technology and services EMEA, Arrow ECS

Approaches such as copy data virtualisation (CDV) will succeed many of the siloed systems that are in place today, by replacing all the software licensing and capital-intensive hardware tied up in areas such as backup and DR, business continuity, dev & test, compliance and other systems with a simplified approach.

This is achieved by capturing a single copy or ‘gold copy’ of data from production and reusing that data for multiple purposes, allowing



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applications to directly access the data without any physical data movement.

*More and more enterprises choose to host their data in private clouds*

– Geraldine Osman, VP international marketing, Connected Data

We are seeing more and more organisations turning towards the cloud as part of a hybrid strategy, and this will only continue to grow in 2016.

However, organisations are starting to become more concerned about how and where their data is stored, and as a result more businesses are implementing private cloud deployments rather than risking their data in the public cloud.

Private cloud solutions that can offer the same features as the public cloud but in a secure and sustainable model are set to become a bigger part of enterprise storage infrastructures as they provide easy mobile access for users as well as secure file sharing.

Increasing mobility of users and innovative developments in mobile technology will be a big driver in how storage infrastructure evolves. As technology advances, users expect instant access anywhere and anytime, causing them to adopt their own ways of accessing and sharing data, creating shadow IT issues. As a result, the IT function will seek private cloud platforms that offer control over

security, privacy and locality of their company data.

The past few years have shed light on how susceptible the public cloud is to data breaches. In 2014 we all heard of the iCloud hack that leaked celebrity photos, and earlier this year Dropbox suffered a major outage leaving customers unable to access their data.

It is also becoming more evident that public cloud providers are struggling to return a profit from their model and are coming under increasing pressure from investors.

*The recent European ruling on Safe Harbour is likely to have the greatest impact on storage and data centres as we move into 2016*

– Andrew Roughan, director, IO London

While many privacy advocates rejoiced, the repercussions that it will have on enterprises and service providers is far reaching, since no data of an EU citizen can now reside in a US data centre. Many businesses will be reassessing exactly where their data is stored.

Businesses from all sectors that hold European data, from social media and retail to banking and insurance will have to architect their IT solutions to ensure that no European data is stored in the US and be able to prove that it is not governed by Safe Harbour.

For the past ten years, the storage industry has been focussed on

**‘Confusion around what software-defined storage means still abounds’**

becoming increasingly virtualised and ubiquitous. Now storage will have to navigate complex data protection legislation in multiple locations that will often be contradictory, especially for globally regulated industries.

In essence, tools such as geo-tagging will become vital in determining the appropriate use of storage capacity for enterprises and service providers alike. The inevitable outcome will be a hybrid of public/private architecture classified into protected/unprotected categories.

Data sovereignty and privacy has been a big focus in 2015, and we expect this to continue through 2016. Businesses are going to have to start looking carefully at geographical options for data storage, and possibly having to use multiple data centres in multiple locations to ensure data sovereignty and avoid Safe Harbour laws.



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