



Data management in the digital realm - trends, challenges and other constraints

Introduction

IT is going through a phase of evolution with a colossal scale that demands innovative approaches and methodologies, seen on new platforms.

Organizations have become more demanding than ever when talking about service SLAs. Additionally, they face explosive data growth due to the mega proliferation of social media and enhanced adoption of digital.

Organizations do understand that this data aka big data can be harnessed to extract value and drive business strategies. Big data is unstructured, massively scales, spreads but is a platform that drives insights. With tools developed and matured for ingesting and processing of data available from social media and Internet of Things, the value of data has exponentially risen. Data is indeed the most critical component in any organization. However this platform brings challenges and complexities around data management due to its scale and spread.

[Forrester predicts that the big data technology market will grow at a 12.8% CAGR from 2016 to 2021](#) [New, evolving tools to manage big data will grow at double-digit rates, september 2016, Forrester]. Data is indeed the most critical component in any organization.

Infrastructure and processes surrounding data protection and management should not only be efficient but also be an enabler and facilitator of the 24X7 enterprise. Irrespective of the type or location of data, organizations look forward to three core expectations.

The word “digital” transcends organizations, businesses, boundaries and geographies. One of the critical components that forms part of “digital” is data. The surrounding criticality gains prominence due to sheer volumes, scale and heterogeneity seen at various levels. Protecting and managing this data constitute one of the key challenges in the digital realm. This whitepaper attempts to give a comprehensive view of trends, challenges, constraints, and the changing face of expectations around data management in the digital realm.



Service continuity

Disaster Recovery (DR) orchestration, RPO's and RTO's in minutes.



Simplified and unified data management

Availability of workload and data irrespective of type, criticality, and location to improve ROI's and flexibility



Governance, compliance and granular search ability

Intuitive proactive monitoring, reporting, and processing to ensure business and regulatory requirements are met.

The changing landscape

- **Data source and location can no longer be considered a challenge**
- **Addressing rising criticality as an integral part of data management strategies**
- **New expectations from delivering platforms**

Impact on business revenues and degraded user experience are not acceptable anymore during a downtime whether planned or unplanned. The expectation on data and infrastructure restorations are more stringent than ever and expecting support for granular VM, file, object-level recovery and instant file-level search to accelerate recovery times are just the usual.

The other constraints and expectations

During our numerous interactions with clients, customers and partner vendors, we understood that backup and data protection is yet to stay ahead of the pace of data growth. Additionally, budgets either have leveled or reduced. Within these constraints, meeting scale and performance is one of the major challenges that companies face. Secondly, organizations do understand that there are few technologies that will enable “one size fits all” approach but they are looking for and expecting a framework that can help them consolidate data management methodologies and at the same time allow them to scale and grow.

If we think deeply about an organization’s expectation then we might be able to conclude that many of the expectations around storage and data protection requirements were seen earlier. There was always a need for efficient management of data and its copies.

However, this need has become more intense with the phase shift that the industry is going through that involves new applications, methodologies, approaches, expectations and overall a new IT. The expectation is proactive, seamless, simplified, governed, regulated, unified data protection and management across geographies.

Then and now

A few years back data protection meant backing up a server and writing it onto a tape. That methodology has undergone a sea change and is no longer valid in today's world brimming with virtualized, converged, hyper-converged, As-A-service delivery, and cloud infrastructure. There was a time when every organization ran critical or non-critical applications within the security and control of their own data centers but those were old days. Today, applications are stored, accessed and delivered differently.

Organizations are curious and willing to explore cloud driven as-a-service platforms such as PaaS and SaaS. These platforms attract organizations by delivering advanced customer-centric efficiently operating businesses. However, these platforms come with a heavy price tag in storage and capacity costs. Despite the high costs, we see increasing reliance on SaaS platforms. Organizations understand associated risks and hence are cautious. They are educating themselves and have this want of some form of data protection for data located in SaaS, PaaS and hosted platforms. If we do a bit of an analysis we find an opportunity for balancing costs, risks and harnessing the positives of cloud platforms. If we condense our understanding then we will visualize the following:



The location of data and its type can no longer be considered a challenge



New platforms for processing data



New sources of data ingest



New ways of defining strategies

Another change that we saw was on the data type itself. The dominance of unstructured data type over a structured one has significantly increased in the last few years. This adds complexity to the challenges. We are aware of the nature and importance of big data. It is complex, drives insights, facilitates strategies and hence planning and implementing data protection and disaster recovery is expensive. Additionally, organizations are aware that big data protects itself with its federated architecture and self-healing capabilities. But have we thought whether these capabilities are good enough for an enterprise-class architecture?

Did we consider site-wide failures and force majeure conditions?

Have we thought about scenarios when inherent data protection architecture might fall short in meeting the expectations?

If not then a site-wide disaster may make us non-compliant. It is prudent then that there is a need for cost-effective big data protection and disaster recovery methodologies and solutions to be an integral part of any data management strategy.

The expectations on upholding SLA's and support agreements have become more complex with varied data types, hardware and

application platforms. The variance doesn't end here, rather we see additional variances in data protection and restoration SLA's. At one end of the spectrum, we have backup copies that are purged fortnightly and at the other end, we have scenarios wherein backup copies are expected to be accessible during the entire lifecycle of an organization and sometimes even beyond that. Backup solutions involving backup software, backup targets, backup methodologies, and backup policies are expected to deliver across the length and breadth of such variations.

The solution

The solution is built up on independent blocks that respond to these challenges. It facilitates data protection and management that is appropriate for both traditional and modern data centers, handles heterogeneity spanning across data sources, data types and data targets. Also, the solution delivers efficiencies, brings customizations and enables monitoring and governance through a single pane of glass. The solution built on open architecture allows organizations to control cash flows and avoid vendor lock-in scenarios. All in all, this helps to deliver a rich experience to end users.

To read more about the solution please stay tuned for the white paper titled: [Data management in the digital realm - breaking dawn - optimizing the usual](#)

About the author

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