5 Storage Trends IT Leaders Need to Know

Why You Should Be Rethinking Your Storage Strategy

Introduction

Data is the lifeblood of your organization, so you need to find the most efficient ways of storing and accessing it. According to PricewaterhouseCoopers' Global Data and Analytics Survey, 39% of executives surveyed considered themselves highly data-driven decision makers. 36% of these decision makers use prescriptive analytics to forecast trends that affect business processes and customer behavior. To maintain a competitive edge, your business needs to take advantage of the profitable insights mined from big data.

Today's storage innovations help companies make the most of big data. This eBook explores 5 trends that are expanding the capabilities of storage infrastructures:

1) Object-based Storage

2) Real-time Data Analytics

3) Automated Storage Tiering

4) Cold Storage and Archiving

5) Converged and Hyperconverged Infrastructure

[1] PricewaterhouseCoopers | http://www.pwc.com/us/en/advisory-services/data-possibilities/big-decision-survey.html

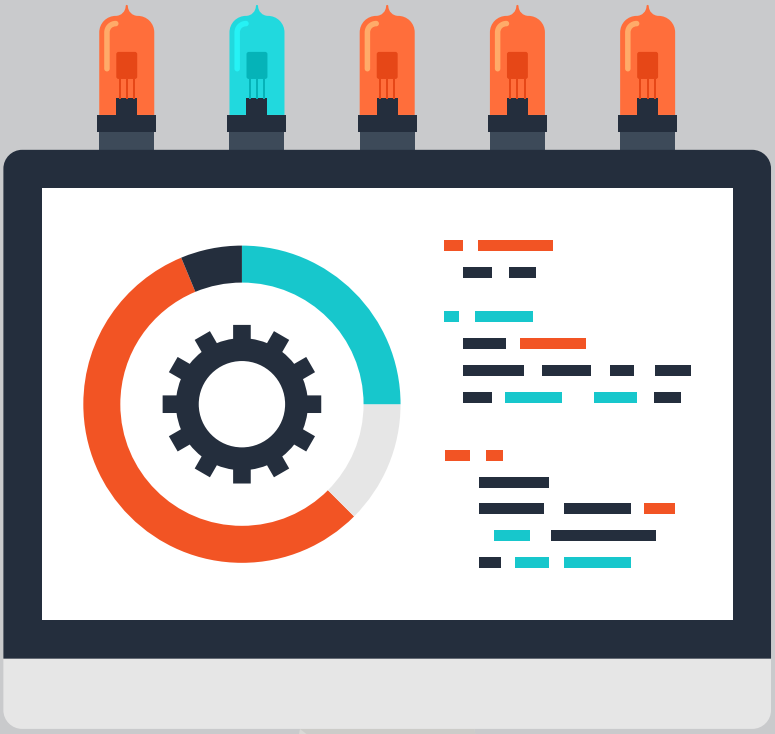
Object-based Storage

Storage needs to be able to organize the variety of data that is available to be analyzed for insights. One of the biggest data management challenges is unstructured data because it comes in so many complex forms. Unstructured data originates from emails, files like spreadsheets and Word documents, social networks, and mobile interactions. It can come in the form of text, video, or audio.

Forbes reports that 80% of the data that enters companies today is unstructured.[2] According to IDG, unstructured data grows at a rate of 62% per year and stands to make up 93% of data by 2022.[3] **Unstructured data is such a big part of the information available to organizations that your business can't afford to ignore it.**

Unstructured data contains a wealth of complex information about customer motivations and sentiments. But it can be difficult to store and access efficiently. Traditional hierarchical file storage systems make organizing and accessing unstructured data difficult, as it cannot be fit into pre-existing fields like batches, files, or columns.

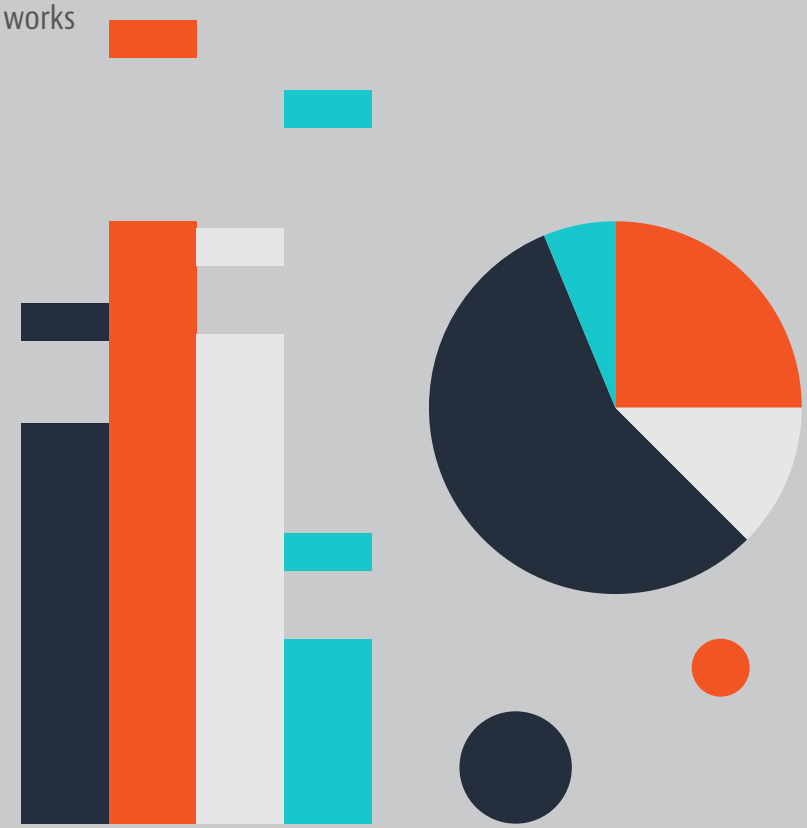
Object-based storage overcomes the challenges of unstructured data by using a flat structure to store an object in a pool. Metadata and object IDs are used to identify and locate unstructured data according to *what* it is, not *where* it is.



[2] Forbes | http://www.forbes.com/sites/steveandriole/2015/03/05/the-other-side-of-analytics/2/#2e3580624ebe
[3] Beta News | http://betanews.com/2016/04/13/crowdsourcing-platform-creates-insights-from-unstructured-data/

Real-time Data Analytics

Not only does today's storage need to manage a greater variety of data than ever, but it also needs to enable it to be processed faster. Within a minute, real-time analytics processes newly-created data. It works on the principle that insights need to be pulled from data immediately to make a meaningful difference.



Benefits of Real-time Analytics

With real-time analytics, information can be drawn from CRM and ERP systems to discover customer trends as they develop. Decisions can even be made during a customer interaction so your business can immediately meet their needs.

Real-time analytics can also help streamline the supply chain. Up-to-the-minute information about inventory, supply, and demand status enables companies to fill orders and make deliveries more efficiently.

Using real-time analytics, your business can take a proactive approach to problem solving. With data from sensors on machinery, your business can react to errors before serious damage is done. Real-time anomaly detection prevents fraud and intrusions before mission-critical information is stolen or compromised.

The Challenge of Real-time Analytics

Real-time analytics puts unique demands on storage infrastructures. It requires storage to process small batches of data quickly. To make this happen, your storage solution needs a fast input/output rate with low latency.

[4] Beta News | http://betanews.com/2016/04/13/crowdsourcing-platform-creates-insights-from-unstructured-data/
[5] Forbes | http://www.forbes.com/sites/steveandriole/2015/03/05/the-other-side-of-analytics/2/#284067d74ebe

Automated Storage Tiering

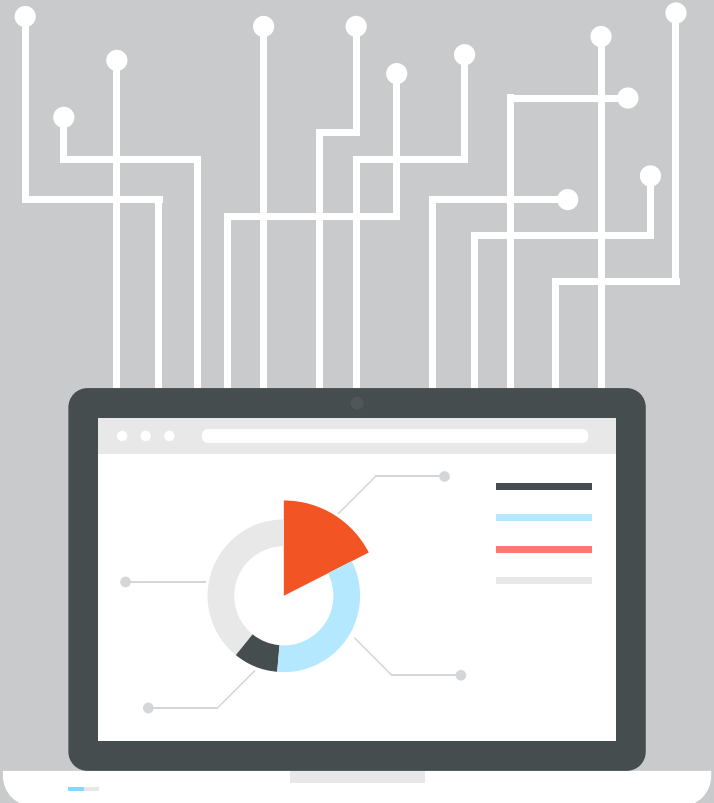
Your company needs to invest in high-performing storage to meet the performance demands of big data and analytics. But you don't want to fill this expensive, state-of-the-art storage with data you don't access regularly. If your company doesn't store data in the right place, money can be wasted.

As data enters your business, you need to be able to move it to the right tier of storage. Manual tiering is a complicated, time-consuming management task. You may not have the staff resources or the extra man-hours available to accomplish the task. With manual tiering, data must be continually monitored and classified according to policies.

Streamlining Your Tiering Process

Automation can take over these tedious monitoring and classification processes. Before deploying automatic data tiering, you can profile applications according to input/output and throughput rates. Once tiering policies have been established to accommodate performance needs, the system can follow them without intervention.

Mission-critical data moves to high-performing storage tiers. Data that is accessed less frequently can be moved to slower, less expensive storage. Tiering uses your infrastructure more efficiently, saving you from overprovisioning.



Cold Storage and Archiving

Like data tiering, cold storage and data archiving use your storage resources more efficiently and logically. Facebook saved millions of dollars by moving its replication files to cold storage. Without the need for redundant electrical supplies or backup generators, they cut a quarter of their energy costs.[4]

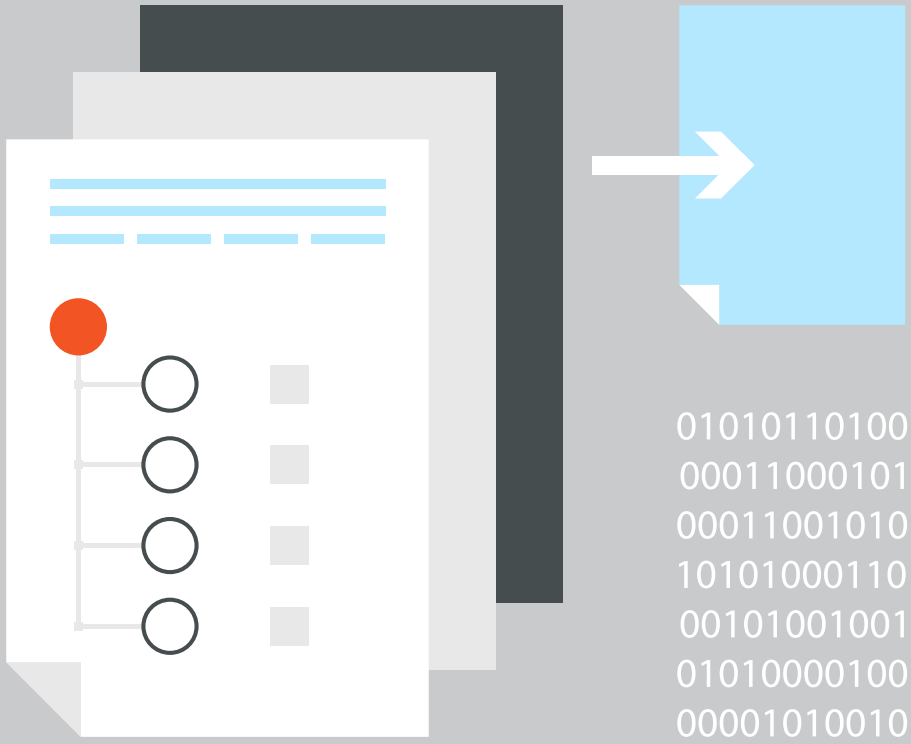
Cold data storage can also narrow backup windows. Removing seldom-used data from your production infrastructure eliminates it from your backup set for changed data.

Archiving for Compliance

Just because data isn't being accessed frequently doesn't mean it isn't valuable. Compliance standards demand that records be kept in archives beyond the time needed for typical backup and recovery. Records also need to be kept of all transactions for audit.

For instance, the Dodd-Frank and Sarbanes-Oxley Acts state that financial records need to be kept for 5 years.[5] Electronic medical records must be preserved for a lifetime. Violations of HIPAA can result in fines anywhere between $100 and $50,000 per violation, even if they were unintentional.[6]

For legal e-discovery, information in the archive needs to be retrievable by auditors and regulators. They need to determine if unauthorized users have compromised or accessed the records.



[4] Data Center Knowledge | http://www.datacenterknowledge.com/archives/2015/05/08/cold-storage-the-facebook-data-centers-that-back-up-the-backup/

[5] DarkoKravos | http://www.darkokravos.com/dodd-frank-recordkeeping-rules-summary/

[6] American Medical Association | http://www.ama-assn.org/ama/pub/physician-resources/solutions-managing-your-practice/coding-billing-insurance/hipaahealth-insurance-portability-accountability-act/hipaa-violations-enforcement.page

Converged and Hyperconverged Infrastructure

One of the most disruptive trends affecting storage architecture is converged infrastructure (CI). Gartner noted that the integrated systems market—including CI—grows by 50% every year.[7] MarketstoMarkets predicts that the CI market will reach $33.89 billion by 2019.[8] CI re-envisions the data center. It creates a unified environment that packages storage, compute, and networking together. This unified approach is the answer to traditional siloed infrastructures.

Hyperconverged infrastructure (HCI) advances this movement by adding a layer of virtualization. Implementing HCI opens up further possibilities for innovation. HCI provides a bridge to the cloud and creates an optimal environment for application testing and development.

CI and HCI optimize scalability with a building-block approach to IT architecture. Storage, compute, and networking come pre-configured and pre-tested in a single chassis. If you need to meet growing capacity and performance needs, you simply add another building block. Provisioning infrastructure can be accomplished in a matter of hours, reducing costly downtime.

While each component in CI can be treated as a separate entity, the technology in HCI is integrated and can't be broken into discrete units. The 2 approaches also handle storage differently. In CI, storage is attached to a physical server. In HCI, storage is provided by direct attached storage, network attached storage, or storage area network without the need for hardware.

CI and HCI both simplify management, freeing your staff to focus more on core business processes. They no longer have to juggle contracts and service-level agreements with multiple vendors. One vendor handles management tasks through a single pane of glass.

[7] CRN | http://www.crn.com/news/data-center/300073165/gartner-converged-infrastructure-magic-quadrant-nutanix-top-visionary-vce-overall-leader.htm

[8] MarketstoMarkets | http://www.marketsandmarkets.com/PressReleases/converged-infrastructure.asp

Keeping Up with Storage Trends

Catching up with these new storage trends may be easier than you think. Software-defined storage (SDS) meets the needs of today's top technology trends. Because the software manages storage, your business gains higher performance from commodity hardware.

SDS provides the right environment to store and access big data. SDS enables high-performance processing and higher capacity than hard disk storage, making it more suitable for big data workloads. SDS also has built-in data management capabilities, like deduplication and replication, for greater consolidation of storage resources. SDS commonly offers automated data tiering as a function.

IBM is the top provider of SDS platforms with its Spectrum Storage offerings. In the past, cost has been a barrier to adopting SDS. But last year, the price of flash storage fell 75% over the span of 18 months.[9] With its greater storage capacity and a smaller footprint, IBM Spectrum reduces storage costs by 50%.[10] IBM's Spectrum Storage simplifies storage management while enabling your business to leverage data for profitable insights, including those gained through cognitive analytics.

With SDS becoming a more economical option, now is the time to start exploring the benefits it can offer your company. Some of its features, like automated data tiering and rapid data processing, are incentives for adoption. But your business may want assistance from experts to uncover all its benefits. As an IBM partner, Vicom has the expertise to help your business integrate Spectrum Storage into your infrastructure.

[9] TechRepublic | http://www.techrepublic.com/blog/10-things/10-storage-trends-to-watch-in-2016/
[10] IBM | http://www-03.ibm.com/systems/storage/spectrum/

Is your current storage infrastructure on trend? **Reach out to the experts at Vicom to find out if IBM Spectrum Storage is right for your business.**

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