ISG Guidance on Modern Storage Solutions

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Introduction

The years since 2010 have arguably made more of a difference in the storage industry than any other time in the history of computing. In 2013, ScienceDaily released its findings that 90 percent of the world's data was created in the past two years and it's showing no signs of slowing down.

Companies are being inundated with new customer data, which means that new storage solutions are needed to keep up with it all. Since the data boom between 2011 and 2013, storage professionals have created innovative solutions to keep up with growing demand. What was a $43 billion industry (including storage hardware, software and services) in 2009 has grown more than 50 percent to $65 billion in 2015. And demands will continue to rise.

Small to midsize businesses are also feeling the challenge and are forced to deploy larger fleets of servers in an effort to store their relevant customer data. The traditional models in which applications had their own dedicated storage resources just can't keep up with modern demands. Keeping data oversight manageable requires a modern IT infrastructure capable of driving business agility—and it all starts with an efficient storage solution.

Storage area networks (SANs) emerged as the answer for companies looking to centralize resources and enable data sharing.

What does an efficient storage solution look like?

As storage shortages became more common, it became abundantly clear that individual servers just weren't going to be enough to store all of a company's data. Multiple servers helped with the capacity issue, but businesses needed instant access to the vast field of stored data.

Storage area networks (SANs) emerged as the answer for companies looking to centralize resources and enable data sharing. Since then, the features and benefits of SANs have become

an integral part of the IT infrastructure. Here are a few of the productivities SANs offer that many users now take for granted:

- **Application performance:** Business users expect a certain level of immediacy when opening applications. In truth, that level of responsiveness wouldn't be possible without an efficient storage solution. Whether it's big data servers, email, the CRM system or document management system, they all would run at a snail's pace without the right SAN.

- **Increased flexibility:** As storage needs evolve, businesses need to be able to easily change their network to adapt. With a SAN, you can easily move storage resources from one host to another or increase file system size when additional capacity is needed.

- **Total network uptime:** Network downtime isn't something businesses can afford in the modern world. Network functionality also requires storage resources to remain online and running smoothly.

As storage demands increase, the SAN becomes crowded with increasingly complex storage appliances and systems. Loading up the SAN with complex systems can cause it to run slower and hinder the benefits of a shared resource model.

Using all of the SAN's features

On its own, the SAN enables companies to share resources and quickly access the growing pool of data they've collected. However, there are features of the SAN that many companies don't utilize. Optimizing storage investments requires companies to harness the true power of the SAN and features such as:

- **Snapshot and compression:** Backup and disaster recovery are big concerns for storage systems. With these features, companies can

capture system data in real time for simple restoration. With compression, the snapshots won't take up too much space in an already crowded system.

- **Deduplication:** The right SAN can effectively hunt down duplicate files and consolidate them into the one file users meant to create. Less writing, less wasted space and higher performance are the benefits to look for from deduplication.
- **FAST cache:** Fully automated storage tiering cache, or FAST cache, increases storage performance by putting frequently accessed data at the forefront of the system for quick and immediate access.
- **Thin provisioning:** Applications take up a lot of space in the SAN, but this feature can determine exactly how much space is being taken up and determine how additional space can be put to good use.

Optimizing storage investments

Today, new solutions like converged storage and virtualization have emerged to make traditional SANs even more efficient. With so much invested in storage technology, companies aren't looking to replace their SAN but instead want to extend and enhance their existing systems. With critical workloads and applications like Oracle, VMware, virtual machines and more all running on the traditional SAN, it's not realistic to think that it can just be replaced.

It's all about the flash
Flash storage and solid-state drives emerged with the promise of more powerful and efficient storage, but the price point was too high for the business world. Now, flash storage prices are dropping and the technology is seeing greater adoption as the market for flash-based arrays has grown to more than $11 billion.

Flash storage is electronically erasable programmable read-only memory (EEPROM) that provides an upgrade from more traditional hard disk drives by optimizing performance-intensive workloads for immediate access to critical data. Flash-based SSDs are less power-hungry, less expensive per IOPS and have a lower total cost of ownership compared to

The Next Generation of HPE Storage Solutions

As an HPE Platinum Partner, ISG can help you plan, design and deploy the latest and greatest storage solutions for a truly exceptional SAN experience. Let ISG help you deploy the next generation of storage solutions with Hewlett Packard Enterprise offerings such as:

- HPE 3PAR StoreServ to reduce capacity needs by 50 percent, guaranteed.
- An extensive portfolio of HPE StoreFabric Fibre Channel protocol storage network switches, transceivers and cables
- HPE Smart Array technology uses the latest SAS/SATA HDDs, and SSDs make scaling simple
- HPE StoreVirtual and StoreOnce offer backup and recovery features that cut storage costs by up to 65 percent, reduce rack space by up to 50 percent and decrease power consumption by as much as 70 percent
- And much more

hard disk counterparts. Implementing flash storage can push the SAN to new limits without overhauling the whole network.

Hybrid arrays are an increasingly popular option
Especially for SMBs, all-flash storage still isn't a possibility. However, hybrid flash arrays can make flash storage more accessible for the average company. In fact, hybrid flash adoption has been far more prevalent in enterprises, accounting for $10 billion of the $11.3 billion market.

Hybrid flash arrays combine some of the EEPROM benefits of all-flash SSDs with the cost-effectiveness and size benefits of HDDs. Rather than deploying all-flash storage, hybrid arrays enable companies to implement a flash tier in the SAN that can boost performance without driving up initial cost of ownership.

ISG guidance in the selection of SAN solutions and storage options

Choosing the right SAN solutions and storage options requires a level of experience and expertise that many companies don't have. As storage demands increase, it will become tougher for decision-makers to sift through the increasing number of storage options.

ISG, a Hewlett Packard Enterprise Platinum Partner, has more than 30 years of experience working with customers to develop truly customized data center assessments designed to help companies take their IT infrastructure to the level necessary for modern computing demands. Storage solutions exist at the heart of the data center, and we can help you determine which systems are right for your specific needs.

We help to eliminate some of the "do-it-yourself work" that has led to such piecemeal storage solutions. We offer the latest HPE converged infrastructure solutions and storage offerings that can take once-divided data centers and unify them to streamline business processes and application performance.

Despite the move to converged or hyper-converged solutions, we know that your critical workloads are all stored in your traditional SAN and that it's not so easy to migrate to a new solution. Our assessments analyze every byte of data throughout your storage solutions and clean up old data that often gets left behind by legacy applications. If you want your sleek, new applications to run smoothly, ISG can make sure the SAN is prepared to make it happen.

ISG knows that keeping your applications performing at their peak is critical to maintaining a productive workforce. That's why SAN assessments and optimization are at the forefront of our services. Without an efficient storage solution, your applications will struggle. Modern SANs are complicated—let ISG walk you through the tricky process of planning, designing and implementing the right storage solutions. ■

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