Improving IT Resource Effectiveness
Reducing Storage Costs with Situational Awareness and Automation

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Introduction

There is no such thing as a data recession! In fact, organizations have more information to process, data to move and store for longer periods of time and in multiple locations without compromising service levels while facing tight or declining budgets than before.

> **Storage Management Innovation**
> Shift focus from cost cutting to reducing per unit expense of IT resources (hardware, software, facilities, people) without negatively impacting service delivery experience.

Business Issues

As an IT decision maker in charge of infrastructure resource management[1] (IRM), you are in a squeeze play. On one side are shrinking budgets, on the other business demands to process, move and store more data. Thus, the need is to do more with what you have in a given footprint constraint. That is, boost resource usage and service delivery within your capital and operating budget, available staffing, time windows, as well as service requirements, regulatory, power, cooling and energy efficiency among other Green IT or infrastructure optimization objectives.

Additional business issues include:
- Lack of IT resource situational awareness
- Pockets of underutilized IT (storage) resources
- Complexity of IT resource interdependencies
- Shrinking IRM windows for maintenance
- Reduce costs without impacting service levels
- Boost productivity in denser environments
- Faster decision making and plan execution

> **Reducing Lost Opportunity Costs**
> Major time consumers for large scale or complex technology upgrades and optimizations efforts are configuration along with change management. If it takes 4 months to phase in new upgraded technology, 4 months to phase out or decommission including data migration, that's 8 months of lost productivity, or, 8 months of added overhead cost. If related costs are $100,000 per month, the benefit from automated migration technology in 2 instead of 8 months is a $600,000 savings.

These issues necessitate improved efficiency in how data and storage are managed in an end-to-end (E2E) manner. This includes reducing time to move, configure, update and replace technology along with flexibility to adapt to changing business demands. Short of curtailing the amount of data generated, processed and stored, the answer is to boost storage effectiveness.

Improving storage costs and effectiveness

You cannot effectively manage what you do not know about or that is not visible to you. Thus informed decisions require insight and situational awareness.

In order to take action on storage costs and in-efficiency, the following needs to be addressed:
- Leverage automation for common and time consuming, error prone tasks
- Free up your staff to do analysis and make informed decisions, both tactical and strategic
- Enable support of more data in a given footprint delivering better service per person
- Find issues in complex and/or large configurations before they become problems
- Reduce hardware, operating, facilities and staffing costs due to under-utilized storage
- Ability to maintain workflow and progress as staff transition in and out of projects

A common time consuming task is taking inventory of IT resources, including how they're configured, what applications are using them and utilization (or lack thereof). For example, understanding a storage system's current configuration, usage and service requirements can lead

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[1] See chapter 4 (IT Infrastructure Resource Management-IRM) "The Green and Virtual Data Center" (CRC) ISBN 978-1420086669

to changes, such as a different RAID level, to boost capacity and availability maximizing the current investment while delaying expensive hardware and software upgrades.

Another scenario is to analyze storage usage to determine how best to leverage thin provisioning and other space saving or data footprint reducing[2] techniques without incurring costs due to missed service objectives. Similarly, having insight into system interdependencies between servers, adapters, switches, storage hardware and software along with remediation to vendor interoperability matrices facilitates recurring IRM maintenance tasks to help further save costs.

> **When and What to Automate**
> One key to automation is having insight into what actions to take and when. Another key is to automate common, yet time consuming tasks freeing up staff to analyze and manage resources. Instead of sifting through data correlating results, tasks well suited for automation, enable your staff to leverage insight and awareness tools. The result is your staff has more productive time for analysis, decision making and task assignment.

What this means is that your costs go down per person of TByte managed, while more TBytes of storage can be managed per person. This is key to driving enhanced densities on a go forward basis to remain competitive. As an example, recouping 5% of un-used enterprise class tier-1 storage at a cost of $15,000 per TByte results in saving of $1,125,000 in new hardware while boosting the effective storage capacity managed per person.

What to look for in a storage situational and automation solution

A flexible storage resource analysis (SRA) tool providing situational awareness should:
- Support for complex heterogeneous environments with many interdependencies
- Project management status reporting displays and interfaces to change management
- Map resources and usage to supported business function service delivery
- Leverage industry standards along with customized run books and workflows
- Enable E2E remediation across different IT resource technology domains
- Execution of tasks including hand-off of workflow tasks to 3rd parties

Conclusion
Storage efficiency is more than storage capacity optimization, it's also addressing how people spend their time doing productive work vs. sifting through configuration reports, logs and other data feeds to correlate and gain insight instead of using automation tools. To close the gap between tight budgets and increasing demands of storing more information, insight and situational awareness tools such as storage resource analysis (SRA) are needed.

SRA enables insight for making decisions and invoking automated policies resulting in business efficiency by maximizing existing storage infrastructure investment and staffing. SANpulse with their flexible SANlogics solution is an example of an innovative company supporting these and other capabilities paving the way for a new generation of IRM analysis, situational awareness and automation technologies. Learn more at www.sanpulse.com.

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[2] See Business Benefits of Data Footprint Reduction: http://storageio.com/Reports/StorageIO_WP_071507.pdf