Visual Storage Intelligence™
The Bottom Line

Whitepaper

Clear Technologies™

Can you rapidly...

Summarize how your storage array is currently configured, and which servers are using which storage on your server?

Identify orphaned storage, hosts, free space, potential exposures and single points of failure?

Confirm that your SAN is properly configured?

Document what you have installed and how it is being used?

Graphically depict your storage array for instant analysis?

Introduction

Despite the current economic environment, many opportunities exist for corporate information technology (IT) departments to proactively ensure their company's survival. In 2008, Gartner stated that "Organizations need to find new and different ways of being able to scale infrastructure without scaling labor costs if they are to take advantage of this metamorphosis of IT." According to the analysts, wasteful IT spending is on the decline, but IT will still overspend by at least at 10 percent through 2010. Much of the waste stems from the inability of traditional IT departments to realize savings as they shift from buying and building technology to accessing IT as a service. Additionally, utilizing IT assets correctly increases efficiency in the short term, while setting the stage for greater competitiveness over the long term.

More than ever, a person working in an IT department, in the midst of tough economic times, resource constraints, and low job security, is being asked to do more with less, be proactive with cost reduction, become more efficient, and provide timely and accurate information.

This whitepaper will highlight a new service, Virtual Storage Intelligence, which enables the analyst, manager and business executive to proactively gain efficiency and cost reduction by correctly utilizing storage IT assets. *The marketplace, in light of all of its pressures, requires a service that can affordably, quickly, and visually actuate a correct decision.* The Visual Storage Intelligence™ service provides a report that quickly enables each *to gain intelligence without learning a new tool* to make major decisions on storage utilization.

Do more, with less

Today's prolonged challenging economic environment demands greater operational efficiency of companies. An organization's success is based, in large part, on the IT team's ability to deliver solutions that support business needs in the most efficient and cost-effective way possible. Greater IT efficiency enables a business to not only conserve resources to survive the current economic circumstances today and but also capitalize on new business opportunities as the economy recovers. Rather than being asked to do so, CIOs and IT managers must be proactive in continuing to discover cost-

reduction areas. A report by Research and Markets, states "IT faces constant organizational and economic pressure to maintain cost effectiveness and reduce expenses whenever possible. The top reasons organizations reduce costs include: 1. Proactive IT cost reduction programs, 2. Negative financial or industry performance, 3. Budget reductions, 4. General economic conditions." Individuals in IT organizations, more than ever, must be proactive in not only identifying waste and inefficiency but also using best practices to provide accurate information that will enable the business executive to make accurate decisions that can increase margins and ensure job security.

Do you know...

Which SAN storage resource are your servers using?

How balanced your SAN is?

How much free space is on your SAN?

Is your SAN is properly balanced and

'I Think' vs. 'I Know.'

A business executive relies on the information maintained by the IT department to appropriately guide them through changing economic circumstances. In his book, *Business Decisions!*, Michael McGrath states that "The business pitfall of ignoring crucial decisions appears in a variety of ways, but there is a common set of underlying causes. Complacency…keeping business as it generally is…and a tendency to delay tough decisions." _According to a study by IBM's Institute for Business Value, half of business leaders say they don't have access to the information they need to do their job. In addition, eight out of 10 of them "make major decisions with missing or untrusted information."_ The solution, of course, is receiving the right information, especially in an economy in which virtually every business decision can be a deciding factor on whether a project—or a business—succeeds or fails. Dr. David Friend, CEO of management consulting firm, the Palladium Group, recently stated, _"IT needs to provide the intelligence to help businesspeople make good decisions…IT needs to be the keeper of the truth, the enabler of good decision making. It can't just spew out data. IT has to provide insight along with the information in order to help managers make good decisions."_ In his book, *Business Decisions!*, Michael McGrath prescribes "Look at a specific decision that you know needs to be made and choose to actively make it."

Store, Ignore, and buy More

For the past 20 years, improving storage efficiency has taken a subordinate position as leaders continually spent to protect 'vital' and 'business-critical' information housed within a storage environment. Simultaneously, the cost of buying storage has increasingly declined. According to a 2007 article published by IBM, since 1989, the cost of magnetic disk storage space has dropped and will continue to drop by about forty percent per year. As a result, a storage IT leader's mantra has been _store, ignore and buy more_. Now, with infrastructure budgets being cut and data growth increasing, a closer look at storage efficiency is needed to see if there is room for improvement. In

2008, Ernst & Young stated, *"…businesses should systematically review major costs, including IT and operations to improve cash flow and operating efficiencies. Cost optimization analysis can help refocus efforts on those areas that improve the bottom line, while reducing spending on areas that do not."*

> "I used to spend hundreds of hours every year manually putting together SAN storage information for each SAN/
> NFS device within my enterprise in order to ensure everything was properly configured as well as provide future planning information analysis. I now get this information in a single consolidated, easy to read format that allows me to spend my time making strategic storage decisions not collecting data"

Complexity: Today's Storage Analysis Tools

However, in order to conduct a cost optimization analysis, one must be able to obtain, organize, correlate and then analyze the data. What slows down the process is the diversity and complexity of assets in a typical IT storage environment. Complexity is defined as non-linear: Intricate as to be hard or not straightforward that has many parts to understand or deal with because it is composed of many interconnected parts (implies a combination of many associated parts) and causes stress and/or confusion because the commingled parts are hard to separate or hard to determine how each interact.

As the complexity of a storage environment grows, so does the complexity of managing storage. The data center is filled with independent disk storage and diverse networking equipment. In many cases, this may mean that the data center staff hasn't had the time to completely document how to obtain 'intelligence' from all of these varied systems and pieces of equipment. An article in Network Computing prescribed a user to, "Make an accurate assessment of your infrastructure to gauge complexity. Make sure your staff has what it takes to deploy newer automation tools."

Large tools. Ironically, IT managers find it difficult to provide insight along with the information because of the complexity of the information housed within their department. Partly to blame is the sheer amount of information within applications managed by an IT department. Even high dollar software, promising to 'monitor' and provide intelligence, inhibit individuals in IT departments because of the limited time and resources available to learn a new complex, all-encompassing tool. According to the same Network Computing article, "…the staff simply may not have the expertise to know everything it should be doing…. monitoring tools from major vendors are fairly well entrenched at many sites, it's common not to focus on automation in this area…which ignores a key benefit of their automation tools: the capability to save IT dollars by identifying problems…"

Furthermore, large tools, because of their off-the-shelf design, are difficult to use and contribute to complexity, rather than provide useful intelligence. Sadly, today's

businesses are filled with software applications that are hard to use and require a steep learning curve to operate. A person will not use, no matter how valuable, a tool that is hard to use. In 1989, Dr. Fred Davis, developed the Technology Acceptance Model which stated that user perceptions of usefulness and ease of use determine attitudes toward using a computer or software application. A 2007 meta-analysis study concluded, "both the correlation between usefulness and acceptance, and that between usefulness and ease of use are somewhat strong."

Small tools. Small tools, although not as complex as large tools, present a different set of issues. Both and MS Excel and MS Access help individuals to organize data, but unless rules are built into the software, the information is worthless and its complexity is not diminished. The user has to sift through silos of applications within each disk or SAN to find the 'right' information and manually correlate it for the decision maker. Moreover, it takes time, complete attention to tedious steps, and skill to produce a usable result.

An IT analyst recently stated it best when asked to quickly assess storage utilization and provide a report to his CIO for important budget meeting, "It can be done but it will take weeks to find, assemble, correlate and provide…but please do not expect it to be visually impressive."

Complexity's best medicine: Simplicity

The opposite of complexity is simplicity. Clearly, what is needed is a new service that will *simply* enable the analyst, manager and business executive to proactively gain efficiency and cost reduction by correctly utilizing storage IT assets. The market place, in light of all of its pressures, requires a service that that can affordably, quickly, and visually actuate a correct decision. Visual Storage Intelligence™ provides a report that quickly enables each _to gain intelligence without learning a new tool_ to make major decisions on storage utilization.

## Rapid Complexity Resolution: Visual Storage Intelligence™
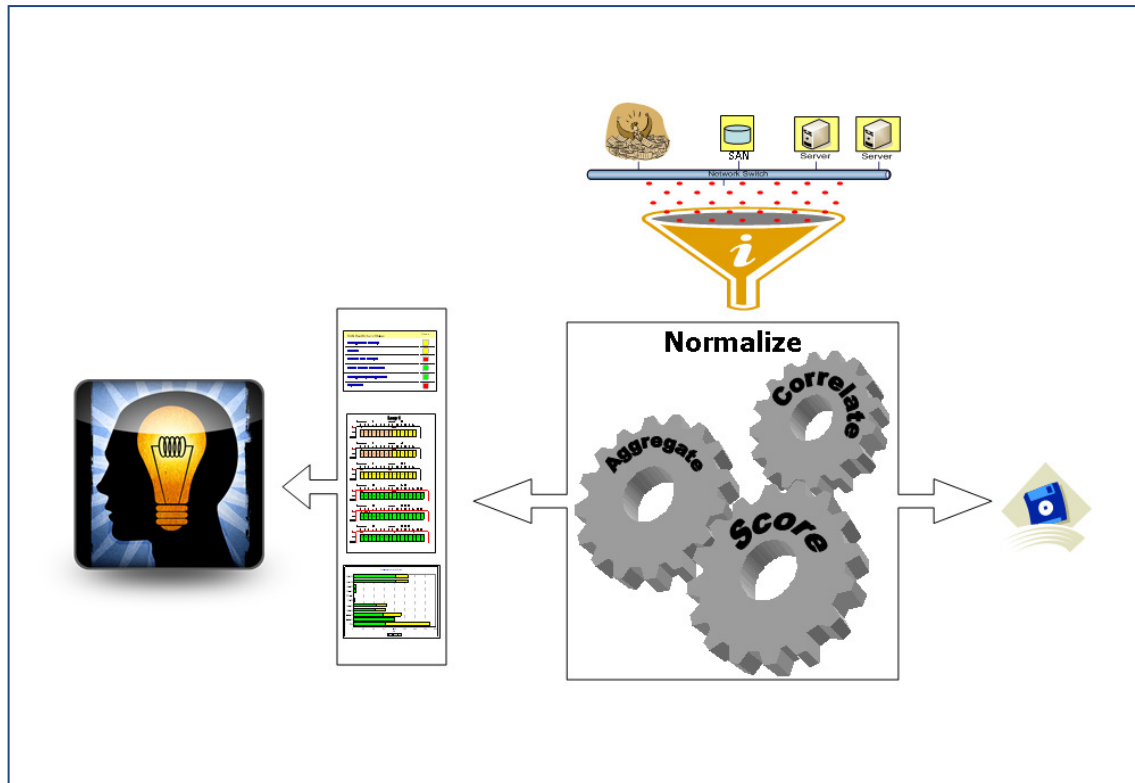
Intelligence without Learning. The Visual Storage Intelligence™ service provides a true in-depth analysis of a Storage Area Network (SAN) environment, to identify the root causes of performance problems. Rapidly identifying problems, increases efficiency and decreases costs. Users have taken what they thought was a properly-configured SAN and used Visual Storage Intelligence™ to identify current and future issues. Benefits to storage administrators include that it is non-obtrusive, provides visual reports, does not require learning a new piece of software, does not require any special data-gathering, and enhances future planning.

Rapidly Ready to Use. Delivered as a Software-as-a-Service (SaaS) offering or frequent report, Visual Storage Intelligence™ tool *does not require additional training* or data-gathering.

SAN Healthcheck Status	Rating
Configuration & Setup	🟨
Balance	🟨
Hosts & Host Groups	🟥
Errors & Other Conditions	🟩
Storage Array Configuration	🟩
Replication	🟥

Rapidly Provides Insight. Enables the IT leader or administrator to realize, reduce and efficiently reallocate storage to meet the needs of the end-user. The summary provides a snapshot of the SAN environment which helps to complete a root-cause analysis of issues.
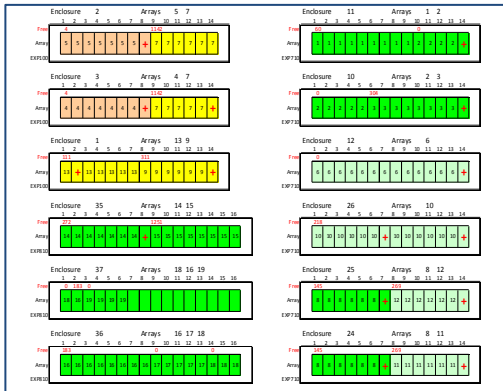
Rapidly Reports an Overall Picture. By consolidating and distilling only those relevant problems, Visual Storage Intelligence™ provides the means from which a person can make accurate decisions. Hundreds of pages are summarized into a small set of charts and graphs. This visual report contains data summarized across *all* the storage arrays.

Rapidly Enables Future Planning. Users are able to obtain tremendous present and future benefits. By quickly and efficiently analyzing the SAN, users spend more time proactively planning future storage allocation needs. This lead time enables the user to be able to stick to budget constraints but also make more efficient use of financial resources.
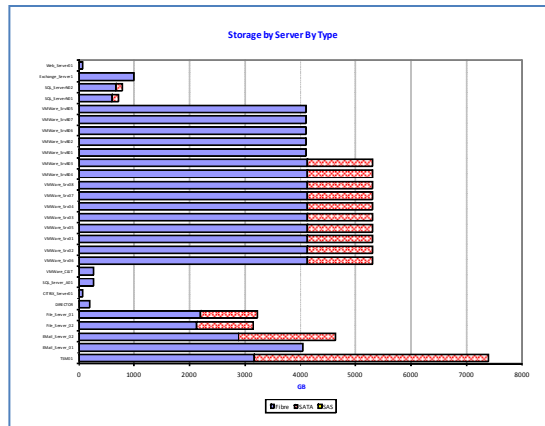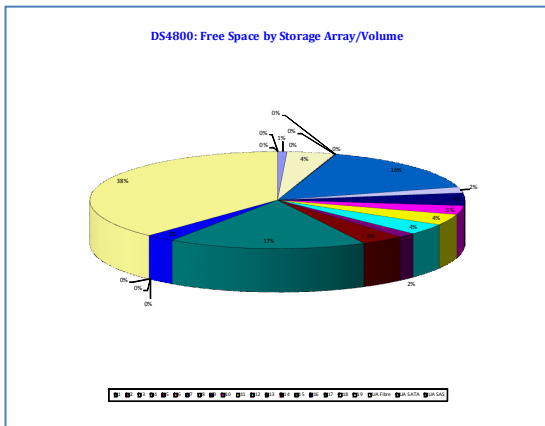
Visual Storage Intelligence^{TM}: Rapid Returns

In conclusion, the Visual Storage Intelligence^{TM} service provides a true in-depth picture of a company's Storage Area Network (SAN) environment that quickly enables its users *to gain intelligence without learning a new tool* to make major decisions on storage utilization. Rapidly identifying problems, increases efficiency and decreases costs.

Increases Productivity. What normally takes weeks or months to manually analyze, takes minutes with Visual Storage Intelligence^{TM}. This, point in time software solution, provides an in-depth report on the health of the SAN enabling users of the report to better make profit-enhancing decisions.

Decreases Costs. A Storage Environment is made of several components that, when added together, can add financial strain on an enterprise. The Visual Storage Intelligence^{TM} service assists the analyst, manager and business executive to execute cost reduction strategies by providing information and analysis to examine both the Total Cost of Ownership and Return on Investment on current and future storage assets. By relying on the benefits of the Visual Storage Intelligence™ service, each can expect a reduction of costs in the following areas:

> *Lower Data Protection Costs*. The Visual Storage Intelligence™ service helps to lower data protection costs by efficiently reallocating the company's backup and business continuity infrastructure, which includes tape, replication, mirror sites and all related planning and operational activity.

> *Lower Maintenance Costs*. The Visual Storage Intelligence™ service decreases hardware and software maintenance costs by frequently reporting on the capacity deployed and whether that capacity is efficiently utilized.

> *Lower Environment Costs*. The Visual Storage Intelligence™ service decreases power, cooling and floor space costs by efficiently utilizing current IT storage assets since a significant number of companies have reached limits on their data center growth and power consumption.

> *Lower Non-Performance Costs.* The Visual Storage Intelligence™ service decreases the extra costs are incurred by the need to *new* deploy storage systems of sufficient performance and scalability to meet the requirements of the Service Level Agreements agreed with the IT users by correctly utilizing current IT storage assets.

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About Clear Technologies

Clear Technologies is an award-winning value-added reseller of comprehensive technology solutions that encompass server, storage, application solutions, services and competitive financing. Founded in 1993, Clear Technologies began by offering information technology solutions and consulting for IBM. www.cleartechnologies.net.