IBM Software
Thought Leadership White Paper

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The business value of improved backup and recovery

The IBM Butterfly Analysis Engine uses empirical data to support better business results

IBM

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Introduction

The continuous growth of information means data protection is not only more important than ever before, it is also more expensive, time consuming and complex. And the historical tendency to use specific point solutions for backup and restore only makes matters worse. Deploying a new backup tool to address each new challenge—whether it arises from the use of new applications, expansion into a new country, acquisition of a new subsidiary, or introduction of new governance regulations—can add complexity to backup needs that already can be hard to handle.

To meet these challenges, organizations need to modernize their backup and restore operations with a complete view of their backup environment and a comprehensive plan for migrating to optimized operations. They need to consolidate backup systems to address more complex recovery scenarios. And they need to reduce costs and energy consumption in their storage and data protection infrastructures.

To help organizations save storage space, operational time, IT budget and power consumption, IBM uses the IBM® Butterfly Analysis Engine storage planning and storage migration assistance tool. The IBM-conducted analysis the tool creates for current infrastructure and backup needs is used to generate detailed return on investment (ROI) and total cost of ownership (TCO) reports. The analysis and reports can provide a holistic understanding of data and storage issues, and demonstrate the value of deploying a modern data protection solution.

Businesses are taking a new look at data backup and recovery

The old approach to expanding data protection no longer works. It is no longer sufficient simply to add more tape or disk capacity. Not only is data simply growing too fast, but storage and data protection budgets may not be growing at all. Certainly, the time available to spend on backup and restore isn't growing. If anything, it's shrinking. As a result, the data backup and restore software and infrastructure that may have fully met an organization's needs as recently as three years ago will almost inevitably fall short of the mark today.

Many organizations recognize this and are searching for a better data protection plan. It is estimated, in fact, that the search to relieve organizations' frustrations over cost, complexity and/or backup capabilities will lead one-third of them to change backup vendors by 2016.[1]

But simply changing vendors is not enough, nor is it always the best option. Organizations need to take a comprehensive look "under the hood" of their storage and backup systems and determine whether they need an upgrade or a replacement based on demonstrated value. To optimize planning and potential migration, they need a clear understanding of where value will accrue. For example, value can come from a reduced need to purchase new infrastructure and storage capacity, more efficient IT administration, lower costs for energy and facilities, or another source.

Complex requirements demand a comprehensive approach

On today's smarter planet, where data and infrastructures are more instrumented, interconnected and intelligent than ever before, it is critical that organizations replace piece-parts approaches with holistic solutions that align with business requirements to drive better business results. The combined effect of best-practice processes and updated technology can help organizations address the pressing need to store an exponentially growing amount of data.

Consider these data needs and approaches:

More ways to leverage data

- **The need**: The value of data and the budgets allocated for its management and protection traditionally have been determined by the infrastructure's speed and access capabilities. But the focus is shifting. Today, both legacy and recently created data assets take their value from the insight they provide and the strategies they can drive to support intelligence-based business models. Today, content is king, while infrastructure is increasingly a commodity.
- **The solution**: To create an environment that delivers the most from their data assets, organizations need analysis and automated design for an efficient infrastructure. This process should deliver business insights into how the environment performs against expected and observed results in environments of equal scale and complexity. The result should provide an organization with an understanding of where to focus time and effort to ensure its environment reaches industry-leading levels. The most effective approach, however, won't push the organization too far—to the bleeding edge of technology adoption. It should use business insight to support best practices and industry standards that can ensure a smooth and reliable implementation that maximizes ROI and business value.

Simplification

- **The need**: Today's bottom line for technology suppliers is to deliver simpler solutions to meet the needs of complex existing infrastructures. Storage virtualization and consolidation provide a starting point, with a simplified operating stack that leads to sustainability, scalability and simplified management. This simpler environment allows accelerated provisioning, which in turn makes IT more responsive to changing business needs. In the end, simplicity can bring reduced operational costs, reduced faults and improved uptime for key applications.
- **The solution**: Before anything else, the organization needs a broad and comprehensive "helicopter view" of the infrastructure. The organization then can create a simplified, efficient approach to building an environment by defining a path and destination for its transformation efforts. The resulting solution can deliver cost and technical benefits, helping to support the organization's strategic position. With management complexity and risk replaced in the transformation process by a simpler, more agile approach, the organization can more readily handle system configuration and data migration to accelerate the adoption of its future architecture.

Cloud: A new deployment model

- **The need**: On today's smarter planet, long deployment cycles and traditional delays in implementation can be real problems. Instead, organizations need agile, more efficient environments. They need to ensure that their applications and infrastructure support the growth of their business—not constrain it. One response is the advent of immediate, automated, cloud-based virtual deployment for compute and storage needs. The cloud approach enables organizations to focus on business needs while IT delivers infrastructure as a scalable service. It further allows more accurate budgeting in support of a dynamic infrastructure that can flex with business requirements.

- **The solution**: A significant infrastructure shift—such as to the cloud—can be difficult to visualize. It can be hard for organizations to compare the requirements and benefits with a more familiar multi-generation/multi-vendor environment. Analysis using the Butterfly Analysis Engine, however, can simplify and clarify the evolution of and migration to a new infrastructure model by normalizing the current environment into its base usage and utilization. The analysis can help organizations make better decisions about whether to deploy a private cloud or use public cloud services for some or all of their backup and archive data.

Reduction of environmental impact

- **The need**: For many organizations, the cost of leasing or acquiring real estate, the labor required for physical plant and IT maintenance, and the expense and environmental impact of power and cooling requirements can be a major burden on the business. Organizations can reduce the burden in all of these areas by consolidating existing storage and more efficiently deploying new storage as needs grow. A more efficient infrastructure typically has a smaller footprint—requiring less space, simplifying maintenance and consuming less energy.
- **The solution**: The Butterfly Analysis Engine rapidly assesses the environmental impact of the infrastructure's power utilization, heat dissipation and other environmental factors, and it can point the way to long-term savings, efficiency and environmental stewardship. Quantifying the potential for reduced environmental impact and the associated cost savings from upgraded assets and new models for delivering IT services can help stakeholders understand the full business value of the proposed solution. An effective analysis of the storage and data protection environment can help organizations understand where they can make gains through consolidation, simplification and adoption of contemporary technology.

IBM supplies the necessary visibility, control and automation

The Butterfly Analysis Engine is a tool IBM uses to provide value to organizations of all sizes by thoroughly assessing the existing backup environment, determining cost projections, recommending a replacement solution and providing a TCO comparison for the proposed new solution. Recommended replacement environments are designed to eliminate the challenges presented by aging backup and restore infrastructures. Using the latest technologies, the IBM approach can help organizations migrate to a backup and recovery environment that supports rapid data growth, solves operational issues, delivers a lower TCO and improves data protection.

The analysis "… has given our client invaluable insight into the reality of their current backup environment. Seeing the figures in black and white using their own real, empirical data has sharply brought into focus just how many improvements need to be made."

—Major healthcare organization agency, UK

The foundation of the Butterfly Analysis Engine is an exhaustive database of infrastructure data collected from more than 400 companies in a full range of vertical markets worldwide. In the initial analysis phase, the Butterfly Analysis Engine uses this data to calculate asset use, waste and cost for the existing solution and highlights any unresolved infrastructure and/or operational issues. In the subsequent assessment phase,

it creates an alternative target environment, identifies a migration plan to achieve that environment, and defines potential savings from making the recommended changes.

The Butterfly Analysis Engine complements the IBM strategy of helping clients improve the visibility, control and automation of their IT infrastructures. IBM helps organizations transform and adapt storage environments, while limiting risk, reducing cost and improving agility. Insights provided by Butterfly Analysis Engine reports document the potential value organizations can achieve from modernizing storage software and hardware solutions.

Analysis and reporting can lead to quantifiable benefits

The business value of Butterfly Analysis Engine reports comes from the quantified and concrete nature of the entire process. The report focuses on operational issues and infrastructure efficiencies, including what is working well along with what needs improvement. As a result, an organization can realize value from the report even if no significant change is recommended.

Butterfly Analysis Engine reports provide a comprehensive examination of backup and recovery issues, covering backup management, unified recovery, improved asset utilization, and reduction in IT workload for both storage operations and service delivery staff. Integration with the IBM® Tivoli® Storage Manager Suite for Unified Recovery is designed to help reduce the number and complexity of hardware components required for backup and recovery—which, in turn, can reduce space requirements, complexity and total costs.

Using the findings from their Butterfly Analysis Engine reports, for example, one multinational utility company was able to achieve an overall infrastructure savings of 54 percent and an overall savings of nearly 45 percent.

A large financial services institution expects to deploy 13 petabytes less storage over a 36-month period. Improvements are expected to save USD650 per terabyte, due to storage space efficiency and increased administrator productivity.

Using the unified backup and recovery strategy recommended in Butterfly Analysis Engine reports, an organization can achieve improved flexibility, data protection and efficiency.

VISIBILITY
See and understand your infrastructure in real time

CONTROL
Transform and adapt while limiting risk and cost

AUTOMATION
Achieve greater efficiency and agility

IBM Tivoli Storage Management, Backup and Recovery creates tailored solutions

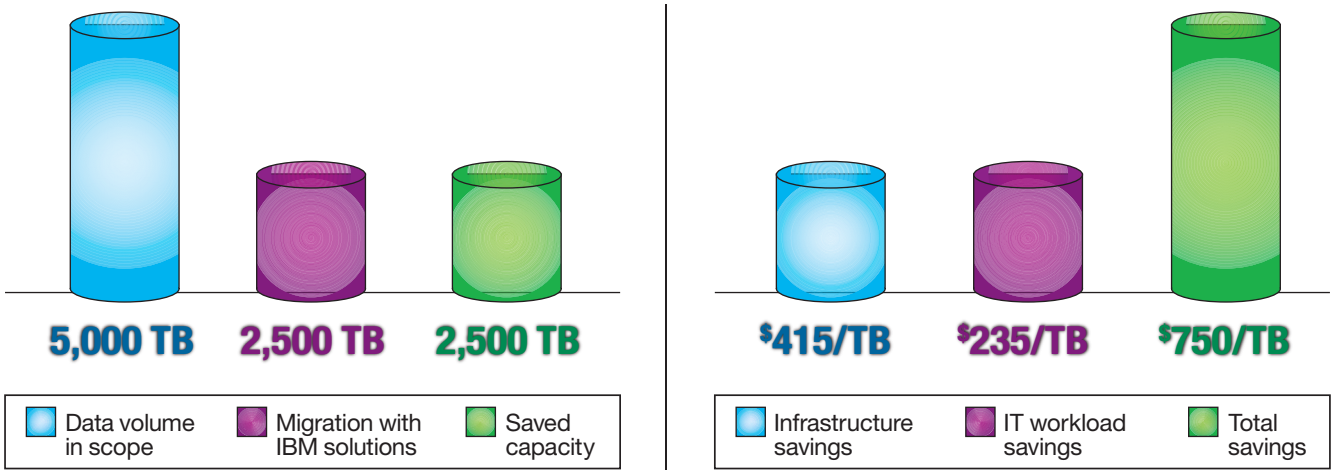
The tools offered by the IBM Tivoli Storage Management, Backup and Recovery family of products enable a consultative process that can accelerate results for improving an organization's backup and restore environment. Basing recommendations on empirical data gathered from a Butterfly Analysis Engine assessment of the existing environment enables IBM to provide a targeted solution utilizing the components of Tivoli Storage Manager that are most relevant to the organization's needs.

For years, the Tivoli Storage Management, Backup and Recovery family of products has been recognized as a leader in unified recovery management, providing the ability to protect a wide range of systems including virtual machines, file servers, email, databases, mainframes and even desktops from a single administration interface. Now, with the introduction of the Tivoli Storage Manager Suite for Unified Recovery, IBM extends its ability to provide storage and backup administrators with a simplified, alternative method for procuring and deploying the data protection and recovery solutions that meet the unique needs of their environments.

Tivoli Storage Manager Suite for Unified Recovery is an integrated solution that packages IBM backup and restore software into bundles that are easy to deploy and manage. The suite includes a full-featured Tivoli Storage Manager server with functions that include deduplication, incremental backups (backing up only the files that have changed since the last backup), IBM DB2® database, IBM Cognos® reporting, and Lightweight Directory Access Protocol (LDAP)-based access control.

With application-aware backup agents, virtual server support, archiving and near-instant recovery for critical systems included in the bundle, organizations can simply deploy what they need.

Sample capacity and cost savings following IBM analysis



"The move to an all-IBM infrastructure proved to be a winning choice, creating a synergy which has allowed us to achieve our business goals."

—Major telecommunications company, Mexico

A capacity-based pricing model enables organizations to use the right tools for the job without worrying about licensing or entitlement for individual products.

Conclusion

The latest advancements incorporated into the Tivoli Storage Manager Suite for Unified Recovery, combined with the latest IBM storage hardware systems, can help organizations transform and consolidate their unwieldy, unreliable and costly multi-vendor situations. IBM employs the Butterfly Analysis Engine to provide organizations with an understanding of the value of an updated backup and recovery solution tailored to their specific infrastructure and operational needs.

The benefits made possible by this approach not only have the potential to save organizations a significant amount of money, but can also provide assurance that if a data disaster strikes, they will have the ability to quickly restore the right data to the right systems

For more information

To learn more about consolidating your backup and restore environment to save costs, eliminate complexity and reduce risks, please contact your IBM representative or IBM Business Partner, or visit: **ibm.com**/software/tivoli/solutions/backup

And to see for yourself how much your backup and restore systems might be improved, ask IBM how to get Butterfly Analysis Engine reports for your organization.

Additionally, IBM Global Financing can help you acquire the software capabilities that your business needs in the most cost-effective and strategic way possible. We'll partner with credit-qualified clients to customize a financing solution to suit your business and development goals, enable effective cash management, and improve your total cost of ownership. Fund your critical IT investment and propel your business forward with IBM Global Financing. For more information, visit: **ibm.com**/financing

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Actual available storage capacity may be reported for both uncompressed and compressed data and will vary and may be less than stated.

[1] Dave Russell, et al., "Gartner Magic Quadrant for Enterprise Backup and restore Software," June 11, 2012.

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