

HOW DATA MIGRATION SERVICES CAN
HELP YOU MAXIMIZE ROI
WHILE MINIMIZING BUSINESS RISK

Stratecast

F R O S T  S U L L I V A N

An Executive Brief Sponsored by Hewlett-Packard

Lynda Stadtmueller
Program Director, Cloud Computing

February 2014

INTRODUCTION

Businesses run on data. As more and more business processes are automated, enterprises are collecting, processing, analyzing, and storing exponentially increasing volumes of user- and machine-generated data. For business leaders, the data represents valuable intellectual property. Data can lead to knowledge, which leads to smart decision-making, which leads to competitive success.

It falls to the Information Technology department to ensure stored data remains secure, intact, and continually available to the users and applications that need it. This significant challenge takes on greater urgency when the storage data must be migrated to a new physical or operating environment—a task that can be triggered by changes to business processes, IT processes, infrastructure or software platforms.

The problem is that enterprise storage data profiles are usually large and complex. Because of the pace at which data is proliferating, and the diversity of data types and sources, few enterprises are able to maintain a homogeneous storage environment. Instead, their storage comprises:

- Multiple storage solutions (Network Attached Storage; Storage Area Network)
- Multiple vendors
- Multiple environments (hosted, cloud, on-premises)
- Multiple tiers (Tier I, Tier II, Tier III)
- Multiple databases
- Multiple applications and users—internal and external

The more complex the environment, the more difficult the data migration will be. If data migration is not properly planned, there is a high risk of disruption, data corruption, and data loss—as well as unplanned outages and downtime which result in increased project costs and time. According to a survey conducted by Bloor Research, the average data migration project has a budget of \$875,000, with overruns costing businesses an additional \$268,000.¹



The average budget for a data migration project is \$875,000, with overruns costing businesses an additional \$268,000.



Few projects can afford to see a line item increase unexpectedly by more than 30 percent. Few project managers can explain away such an increase without a blow to their reputations. To ensure their business data is protected for a reasonable cost, savvy IT professionals are recognizing that data migration is a critical step within many IT projects. They are seeking to follow best practices for their storage data migration projects. More often than not, that includes turning to third-party professionals who can bring tools, processes, and expertise to the project.

¹ Phillip Howard, *Data Migration 2011*, Bloor Research, <http://www.bloorresearch.com/dlfile/data-migration-2011-2107.pdf>.

In this white paper, we look at the potential risks associated with a poorly planned data migration initiative. We show how enterprises can leverage storage data migration initiatives to streamline their data environments, increase business productivity, and contain costs. We also provide some tips for cost-assessing the value of third-party professional services. Finally, we provide recommendations for selecting a storage data migration service provider.

DATA CENTER CHALLENGES AND MIGRATION OPPORTUNITIES

IT managers across every business sector are struggling to reconcile increasing demand for IT services and data with limited budgets and staff. In a recent Frost & Sullivan survey of IT decision-makers, 35 percent of respondents listed “capital budget constraints” among their top three data center challenges. Also ranking high on the list of concerns: growth of storage data requirements (cited by 31 percent); aging/inefficient servers and equipment (28 percent); and high cost of maintaining the data center (28 percent).

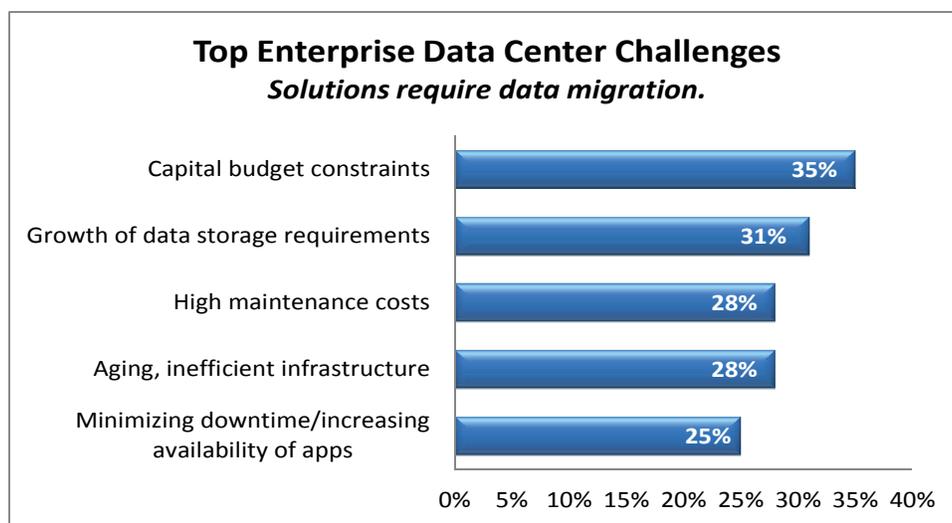
At the same time, data security and regulatory compliance remain top of mind in every industry. While issues such as data loss and leakage or unauthorized access to proprietary data affect every aspect of the business, it nearly always falls to the IT department to assess,

implement, manage, and report on data security and compliance incidents. Furthermore, these functions are not standalone initiatives, but a critical part of every project the business undertakes.

Thus, IT leaders must simultaneously become more efficient while providing more services; enable greater data flexibility while providing higher levels of protection and oversight; spend less while doing more.

To address their concerns, enterprise IT departments are taking steps to optimize and virtualize their data centers. They are implementing standards to make the data centers operate more efficiently and cost-effectively. They are scrutinizing every aspect of IT operations, including server infrastructure, storage, and deployment models, for ways to decrease total cost of ownership and increase return on investment. To meet those goals, enterprises are tackling major initiatives such as:

- Data center consolidation and regionalization, to decrease costs and improve consistency.
- Implementation of private or hybrid clouds, to minimize capital investments in hardware.
- Refreshes and upgrades of storage or servers, to lower operating costs and improve performance.
- Storage consolidation and virtualization, to maximize utilization of existing equipment.
- Implementation of tiered storage, to reduce costs and enhance performance.



- Efforts to improve database performance, to maximize productivity.
- Implementation of security measures, to protect corporate data assets in transit and at rest.
- Adoption of data analytics and business intelligence tools, bringing together disparate databases and sources to improve business decision-making.

Not surprisingly, every one of these major initiatives involves storage data migration. Yet, too often, the actual process of data migration is under-valued when the project plan is developed. The complex process may even be reduced to a single task in the plan (“Migrate data”) and assigned to inexperienced resources. At best, such a plan is sure to face technical issues, incurring cost overruns and timeline delays. Unplanned disruptions will affect user access, application run time and even revenue. In the worst case scenario, data may be lost or corrupted, requiring costly repairs and workarounds, invoking fines for non-compliance, and triggering payments to customers or suppliers for missed service level agreements.

UNDERSTANDING STORAGE DATA MIGRATION

The definition of storage data migration is deceptively simple. The term refers broadly to the movement of data from one storage technology or location to another. However, when enterprises include storage data migration in an IT initiative, two concepts are usually implied:

- The migration usually occurs online, meaning data is still accessible during the migration.
- The process is non-disruptive, at least to the extent feasible. This means that the data should preferably be migrated without noticeable downtime and without requiring user intervention (e.g., system reboot).

For any storage migration, the goals are to protect data and maximize data availability throughout the migration, while minimizing disruption and cost. When an enterprise engages professional storage migration services, the expert uses technology tools, coupled with broad expertise, to manage the project to a smooth and secure conclusion. The expert should assess your environment and provide a plan that specifies which environments can be securely migrated with little or no disruption, and offer recommendations for the smoothest possible migration of other, custom environments. Due to the infinite variations among customer environments, it is often impossible for a single toolset to accommodate every migration scenario the same way.



Due to the infinite variations among customer environments, it is often impossible for a single toolset to accommodate every migration scenario the same way. The expert should possess this knowledge and help you avoid surprises.



The expert should possess this knowledge and help you avoid surprises. Be skeptical of any service provider that claims it can migrate *any* environment without disruption; you can expect rapid back-pedaling if your project involves a complex or custom environment.

THE CASE FOR ENGAGING PROFESSIONAL DATA MIGRATION SERVICES

As noted, many data migration projects are sub-tasks of a large initiative. As such, the project team may underestimate the complexity and urgency of a smooth data migration; and, therefore, may not even consider engaging professional services.

However, professional data migration services can add significant value to the project, ensuring your project goals and deadlines will be met. In fact, in considering the high value associated with the data being migrated, the business case for a migration specialist is very strong.

What Can You Expect from Professional Data Migration Services?

A qualified data migration team brings expertise in storage solutions (hardware and systems), databases, security, common commercial software, and storage data migration. Skills include project management, budget management, and communications. You should expect the data migration team to do the following for your project:

- **Provide a complete inventory and assessment of your SAN or NAS environment** – An initial assessment at the start of the project will identify the environments that can be securely migrated without disruption and any custom environments that will require custom migration plans.
- **Provide a high level reference architecture** – The design will include remediation reporting and plans.
- **Develop an implementation plan** – This design step will be done in conjunction with your team, to ensure that the plan meets your data migration requirements.
- **Provide high performance migration toolsets** – Automated data migration software ensures migration processes are standardized, consistent, and secure.
- **Maintain consistent data availability throughout the migration** – The data migration team ensures that data availability specifications established in the implementation strategy are upheld.
- **Provide start-to-finish project management** – The end-to-end migration project includes testing and phased data migration, through cutover, spearheaded by a project manager who ensures the job is done, on time, on budget, and within your specifications.

Can You Cost-Justify Professional Services for Your Data Migration Project?

Engaging a professional data migration team can easily cost you less than doing the job in-house. Consider the following direct, indirect, and opportunity costs in constructing your business case.

- **Lower risk of data loss** – What is the value of your company's intellectual property? With a poorly planned migration, the business faces considerable exposure to risk of data loss, or corruption of critical data. This, in turn, can make the business vulnerable to compliance violations, SLA payouts, and productivity or revenue hits. For your business case analysis, calculate the likely and potential top line and opportunity costs that would arise from loss of critical data.
- **Reduced project timelines** – Keeping to the project timeline is a universal challenge afflicting major

IT projects, especially for large enterprise projects. When the data migration project is part of a more comprehensive initiative, the downstream impact of any delay is magnified. Professional data migration services can keep your project on track. From years of doing migrations for companies like yours, expert consultants understand where the vulnerabilities and risks are, and plan accordingly. With proper upfront planning comes lower exposure to risk, decreased chance of unexpected disruptions, on-time project completion, and continued business productivity.

- **Minimal resource drain on your team** – Most IT departments are under pressure to maintain daily operations and incorporate new business-enhancing technologies, without increasing staff. It may not be feasible to hire or train existing staff to perform data migration initiatives. By hiring a team of experts, you can keep your staff doing the things they need to do and avoid costs associated with deferring or delaying other IT responsibilities.

BEYOND DATA MIGRATION: HOW PROFESSIONAL DATA MIGRATION SERVICES CAN HELP YOU MEET BROADER IT AND BUSINESS OBJECTIVES

If you're looking at your storage data migration project as simply a storage data migration project, you're missing the chance to maximize the project value. Instead, consider the migration project an opportunity to streamline and optimize your storage environment. A professional data migration team will ensure your new storage environment is optimized to handle not only today's data, but future growth. As such, the project can deliver these additional benefits to the business:

- **Minimize Total Cost of Ownership (TCO) for new storage** – A successful data migration project will provide a framework for anticipated growth. When communicating your goals to the professional data migration team, be sure to specify reduction of TCO. The experts should be able to demonstrate how the plan will keep future storage costs (including new storage purchases) under control.
- **Increased agility and responsiveness** – It's not only about costs; it's also about performance. Your new, optimized storage environment should provide flexibility to respond quickly to changing business needs.
- **Resiliency** – In a follow-the-sun business environment, in which customer, partners, and employees may work anytime, an outage (planned or unplanned) hits productivity, revenue, and your reputation. When you re-engineer your storage environment, make resiliency a priority so that critical data is always available to applications and users.
- **Higher productivity** – Faster response times maximize employee productivity. Determine which business tasks and applications can benefit from optimized storage, and be sure the new storage environment is designed to boost productivity. Follow up by regularly collecting and reporting on metrics associated with application response time, as well as employee productivity.
- **Better data to make business decisions** – Data analytics and business intelligence software make it easier to turn terabytes of data into actionable knowledge. Ensure your storage environment is built to provide users with faster, easier access to current and past data, so they can make well-informed predictions and decisions.

- **Increased user satisfaction** – Technology users are notoriously impatient. Employees, customers, and partners are frustrated by sluggish systems and slow response times. When you optimize your storage environment for faster throughput, your business is likely to see an uptick in satisfaction scores.

CHOOSING A DATA MIGRATION SERVICES PARTNER

To get the most from your data migration project—and minimize total cost of ownership for your storage data solution—you must select the right partner. Your choice of partner should combine comprehensive service, sophisticated technology, and a team of experts. Be sure to look for the following criteria:

The Service

Storage migration services are not alike. Be sure you understand exactly how each provider defines its service offering. For maximum impact, look for these elements in the services you are considering:

Technology-agnostic solutions – This criterion is extremely important—and surprisingly uncommon. Many storage vendors will happily work with you to migrate your data to *their* solutions, or help you migrate within their own product family. But data environments are heterogeneous, involving multiple solutions from multiple vendors. A vendor-specific solution limits your flexibility to continue to use existing infrastructure, regardless of vendor. Furthermore, migration services that limit the scope of the project to a specific type of hardware or solution preclude you from gaining maximum value from the engagement. Thus, the vendor-specific solution can never be more than just a data migration exercise, rather than an opportunity to minimize total cost of ownership and streamline your storage environment.

Customer-specific plan – If storage environments were alike, then data migration would be as simple as synchronizing your MP3 player with your PC. But environments vary in terms of infrastructure, architecture, and operating systems. Furthermore, customer values vary as well. Some data may be more valuable than others; some workloads can more easily tolerate disruption; sometimes cost is a greater concern than time; sometimes the opposite is true. In any case, be sure your partner is willing to listen as well as talk; to work with your team (not just the team leader) to understand the objectives, criteria, and work culture specific to your business; and then to build a plan to meet your needs.

Quantification of cost savings – You can expect marketing literature for storage data migration services to tout cost savings as an outcome. But marketing claims need to be backed up by proof. Select a partner who is willing to identify and quantify savings realized throughout the project, and then to map savings instances back to the original cost reduction goals of the project.

Project management and reporting – You may be outsourcing front line responsibility for the project to your partner, but you retain responsibility for its success. For that reason, you and your partner should be aligned on a ‘trust but verify’ approach. The partner will tightly manage the project, but provide reporting of progress at regular intervals and at key milestones.

The Technology

Software drives migration processes. Automating the migration process reduces required resources, minimizes risks, ensures consistency, and enables industry best practices to be replicated in each project. Look for a provider whose automation tools support:

Comprehensive discovery and analysis – Software tools should facilitate the collection and analysis of details for your entire storage infrastructure, including switches, host bus adaptors, drivers, hosts, and storage. Data should be correlated and analyzed to identify any reclamation opportunities (that is, existing hardware that can be repurposed), as well as remediation efforts.

Security – The software platform should include encryption or other security measures to ensure your sensitive data is protected end-to-end. It should also provide reporting that helps meet compliance requirements.

Orchestration of the storage data migration – When possible, the technology should support an automated, end-to-end migration solution.

Reporting – The migration project should support a wide variety of reports that provide visibility into the storage infrastructure, enable data analysis, and monitor progress on the migration initiative.

The Consultants

The team members assigned to your project must be data migration specialists. Don't be shy about asking about credentials. Team members should bring the following to the project:

Expertise in storage industry – Team members should have, at a minimum, real-world storage experience, gained by working in the storage industry or in a storage management position for an enterprise. If your team includes only IT journeymen—no matter how good they are at project management—you will end up paying for them to learn about storage.

Experience with data migrations – As frequently noted, data migration is complex, and it can't be learned from webinars or product brochures. Only by navigating through multiple large-scale data migration projects can the consultant come to understand the pivot points and vulnerabilities that can mean the difference between smooth completion and frustrating delays.

Experience in storage design, security, and compliance – As noted, a successful storage data migration project will yield opportunities to optimize your storage environment, so it can grow with your business. To make it work, you need experts who can rebuild the entire storage environment for optimal performance. They must understand how to engineer the appropriate levels of tiered storage and resiliency into the environment, implement appropriate security measures, and ensure that the environment conforms to compliance requirements.

You are entrusting your storage data migration partner with your company's most valuable asset: your data. Be sure to approach the selection with discipline and care.

THE LAST WORD

To most enterprises, the value of their data is incalculable. Loss, corruption, or leakage of the data could cause irreparable damage, in terms of productivity, profits, prestige, and competitive positioning. As a result, one would expect that storage data migrations should be approached with the same attention a museum lavishes on a traveling Rembrandt exhibit.

Unfortunately, too often, the data migration is undervalued, thought of merely as a sub-task in a broader business or IT initiative. As a result, the migration frequently extends the project timeline, magnifying costs, while introducing risks to the business.

Savvy businesses understand that a well-executed storage data migration effort can be a stepping stone to optimization of the entire storage environment. The benefits to the company extend well beyond the initiative at hand: the new environment has the power to reduce TCO, improve productivity, and increase customer satisfaction.

The key to a well-run storage data migration is to partner with an expert. Professional storage migration services reduce business risk associated with the migration, while delivering a secure, streamlined data storage environment that can accommodate future growth. For businesses looking to leverage their valuable data to gain an edge in a hyper-competitive global market, engaging with the right storage data migration partner may be the smartest investment they can make.

Lynda Stadtmueller

Program Director – Cloud Computing

Stratecast | Frost & Sullivan

lstadtmueller@stratecast.com

For more information on HP Storage Data Migration services, click [here](#).

Silicon Valley
331 E. Evelyn Ave., Suite 100
Mountain View, CA 94041
Tel 650.475.4500
Fax 650.475.1570

San Antonio
7550 West Interstate 10, Suite 400
San Antonio, Texas 78229-5616
Tel 210.348.1000
Fax 210.348.1003

London
4, Grosvenor Gardens,
London SW1W 0DH, UK
Tel 44(0)20 7730 3438
Fax 44(0)20 7730 3343

877.GoFrost • myfrost@frost.com
<http://www.frost.com>

ABOUT STRATECAST

Stratecast collaborates with our clients to reach smart business decisions in the rapidly evolving and hyper-competitive Information and Communications Technology markets. Leveraging a mix of action-oriented subscription research and customized consulting engagements, Stratecast delivers knowledge and perspective that is only attainable through years of real-world experience in an industry where customers are collaborators; today's partners are tomorrow's competitors; and agility and innovation are essential elements for success. Contact your Stratecast Account Executive to engage our experience to assist you in attaining your growth objectives.

ABOUT FROST & SULLIVAN

Frost & Sullivan, the Growth Partnership Company, works in collaboration with clients to leverage visionary innovation that addresses the global challenges and related growth opportunities that will make or break today's market participants. For more than 50 years, we have been developing growth strategies for the Global 1000, emerging businesses, the public sector and the investment community. Is your organization prepared for the next profound wave of industry convergence, disruptive technologies, increasing competitive intensity, Mega Trends, breakthrough best practices, changing customer dynamics and emerging economies? Contact Us: Start the Discussion

For information regarding permission, write:

Frost & Sullivan
331 E. Evelyn Ave. Suite 100
Mountain View, CA 94041

Auckland

Bahrain

Bangkok

Beijing

Bengaluru

Buenos Aires

Cape Town

Chennai

Colombo

Delhi / NCR

Detroit

Dubai

Frankfurt

Iskander Malaysia/Johor Bahru

Istanbul

Jakarta

Kolkata

Kuala Lumpur

London

Manhattan

Miami

Milan

Moscow

Mumbai

Oxford

Paris

Rockville Centre

San Antonio

São Paulo

Sarasota

Seoul

Shanghai

Shenzhen

Silicon Valley

Singapore

Sophia Antipolis

Sydney

Taipei

Tel Aviv

Tokyo

Toronto

Warsaw

Washington, DC