

# OVERCOMING THE RISKS & COMPLEXITIES OF LEGACY DATA MIGRATION

## EXECUTIVE SUMMARY

Migrating data off legacy storage systems is a necessary part of maintaining an evolving IT infrastructure. Migrations can occur for any number of reasons: managing technical debt, reducing maintenance fees on legacy equipment, upgrading storage systems to meet new and increasing capacity, or performance requirements.

Whatever the reasons for migration, it is a process that often comes with challenges, risks, delays, and costs. Recent research<sup>1</sup> shows that only 36% of data migration projects keep to the forecasted budget, while only 46% were delivered on time.

Organizations that overcome these challenges to have successful migrations know these projects require careful planning and meticulous execution. Planning and execution for a data migration project involves five phases:

- Discover & Analyze
- Analyze & Communicate
- Design & Plan
- Prepare & Execute
- Operational Readiness

IT organizations know these challenges and project phases but often lack the resources, time, or recent experience to execute them while running their data systems. Professional services teams who bring experience along with proven methodologies and tools can assist IT organizations with the planning and execution. These professional services teams provide standardized, scalable, end-to-end project management, and closed-loop governance across all phases. They help IT organizations successfully migrate off legacy systems and onto new, modern data storage systems.

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<sup>1</sup> Experian 2017, "Data Migration Research Study"

This paper takes a more in-depth look into legacy data migrations, the challenges, the successful approaches, and how a professional services team can help take the risk out of any migration project.

## THE DAUNTING TASK OF LEGACY DATA MIGRATION

Once an organization has decided to migrate data, various complexities and challenges arise, including:

- Data ownership
- Coordination of people and business (established migration process)
- Availability and downtime during the migration
- Validation of the new environment
- Operational readiness
- Cost control

These issues are part of the reason why 55% of respondents to a recent survey<sup>2</sup> stated one of the key impediments to data modernization projects is the worry of going over budget. That same survey<sup>3</sup> also revealed nearly 44% of respondents reported a lack of understanding of critical technologies as an inhibitor. No industry standards exist that define the processes and tools used for data migration.

It is easy to understand how more than half of all data migration projects exceed both budgeted time and cost.<sup>4</sup>

At the same time, numerous benefits come from successful data migration. Some of these are obvious, such as the increased performance and efficiency enabled by the updated storage system. There are reduced maintenance and support costs that follow the decommissioning of legacy systems. Increased operational efficiency begins almost immediately after completing a data migration.

Other benefits may be less obvious but can be just as valuable. A data migration project increases institutional knowledge by forcing both IT and business stakeholders to better understand the data being stored. Data is often cleansed and organized as part of a migration project, resulting in increased data integrity. This leads to both greater IT

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<sup>2</sup> Deloitte 2019 “Data Modernization & Cloud Migration Survey”

<sup>3</sup> *ibid*

<sup>4</sup> Experian 2017, “Data Migration Research Study”

efficiency and reduced technical debt. These factors, taken together, lead to a more agile and effective IT organization.

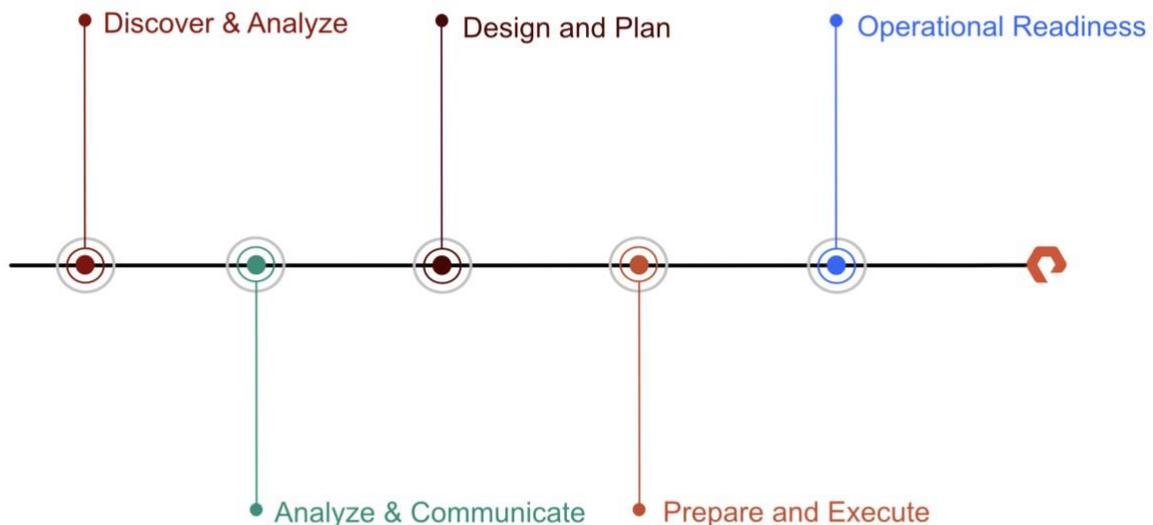
Despite the risk and complexity, successful data migrations happen every day. You need to have the right approach that includes proper project planning, management, and execution.

## ELEMENTS OF A SUCCESSFUL LEGACY DATA MIGRATION

Successful migration projects follow five phases, as shown in Figure 1.

- Discover & Analyze
- Analyze & Communicate
- Design & Plan
- Prepare & Execute
- Operational Readiness

FIGURE 1: STAGES OF A DATA MIGRATION PROJECT



(Source: Moor Insights & Strategy)

Let's take a look at the steps involved in making a migration happen.

## *DISCOVER & ANALYZE*

Before an IT organization decides to conduct a legacy data migration project, there is usually a good deal of pre-project migration solution guidance. It is a fact-finding and confidence-building process leading up to the decision.

The Discover and Analyze step flows from the pre-project work but takes it more in-depth. This phase aims to fully understand and document all the details and dependencies so that the migration solution is customized to the business needs. This also includes non-technical items like maintenance windows, blackout dates, change-control processes, the elimination of silos, and even organizational structure and priorities. The discovery process consists of the following steps:

1. Conduct a detailed data discovery of source systems.
2. Discover existing third-party products related to legacy storage.
3. Discover current data protection solutions for data on source systems.

## *ANALYZE & COMMUNICATE*

Comprehensive analysis and understanding are the basis for any successful execution plan. This is where the operational needs, such as manageability, monitoring, and any third-party software integration requirements, are uncovered. The goal is to understand and document the compatibility of operational elements with the target platform.

The analysis must also be communicated to all key stakeholders across the organization. They are engaged to ensure every impacted team is onboard and any potential changes, issues, or additional requirements are captured and communicated. This keeps everyone aware of what's happening.

## *DESIGN & PLAN*

The data collected in the Design & Plan phase becomes the basis for architectural and migration plans that drive the overall data migration project.

Some of the plans and deliverables created during this phase include defining and developing the following:

- Migration schedule
- Migration methodologies, tools, and run books
- Implementation plans
- Operational plans

With these plans in place, there is a sign-off and commitment to the organization's overall plan. This sets the stage for the actual data migration.

### *PREPARE & EXECUTE*

With the plan in place, the Prepare & Execute phase of any data migration process involves three necessary steps:

1. **Deploy.** All necessary hardware and software are put in place to conduct a pilot migration in preparation for the actual final migration project.
2. **Pilot.** Gain early insight into the overall migration plan. It provides the opportunity to adjust assumptions, validate and uncover risks, and refine the entire project plan.
3. **Migrate.** This is “game day,” when the data migration takes place.

### *OPERATIONAL READINESS*

Once the new system is deployed and the data is migrated, the Operational Readiness phase delivers a smooth transition to the freshly migrated data. This involves two basic steps:

- **Operationalize.** Perform all post-migration activities and update operational runbooks and resources for the new environment.
- **Document.** Complete all necessary documentation and verify the customer is ready for the change and to take over the operation of the new data environment.

With the successful completion of the Operational Readiness phase, the project is complete. And the new data system enters a steady-state operational phase.

### *THE PROFESSIONAL SERVICES APPROACH*

There's a lot to consider when facing a decision about how to handle a data migration. Many migrations undertaken by IT organizations run into issues that can lead to costly downtime. This isn't because IT shops don't know how to move data, rather, migration projects have countless details and complexities that aren't always obvious to an engineer who doesn't do this every day.

IT organizations don't have to tackle legacy data migration projects alone. Professional services teams can supplement your in-house IT expertise with the critical skills and data migration experience to make a project successful.

Engaging a professional services team specializing in data migration can remove significant risk from a project, leading to a faster time-to-value for the new storage systems.

Pure Storage's professional services organization is one example of just such a team of experts. Their migration team specializes in legacy migration projects. That is because Pure's own storage products have a data-in-place, upgradeable architecture that eliminates the need to migrate data once data is on a Pure Storage solution.

The Pure Professional Services approach to legacy data migration projects follows the best-practice phases outlined above, along with industry-leading automation tools. They use end-to-end project management and governance that extends across all of the migration steps (Discover & Analyze, Analyze & Communicate, Plan & Design, Prepare & Execute, Operational Readiness). Their extensive experience migrating many legacy data systems to Pure technology allows you to be confident they can plan and execute a successful migration project in your IT environment.

## SUMMARY

Legacy data migration often sits at the center of digital transformation and IT modernization projects, yet these critical projects aren't an everyday event for most IT teams. IT organizations who attempt to manage migration projects entirely in-house run an increased risk of incurring costly downtime, delays, and budget overruns.

Successful migrations happen every day. The secret to these successful migrations is ensuring all factors are considered when building the execution plan in combination with experienced engineers who are versed in the complexities of migrating legacy data.

Supplementing your team's capabilities with a professional services group brings an increased level of expertise, established practices, discipline, and rigor that all set the stage for a successful project. Engaging a professional services team to help move that data is an approach that makes much sense.

Pure Storage's Professional Services can supplement your own teams' skills to help drive a successful migration project. Pure Storage arrives with deep expertise in legacy data migrations, matched with a set of rigorous processes and time-proven playbooks. It's an approach, and a team, that makes data migrations seem easy.

For more information, please visit the Pure Storage Professional Services webpage:  
<https://www.purestorage.com/services/professional.html>

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