WHITEPAPER

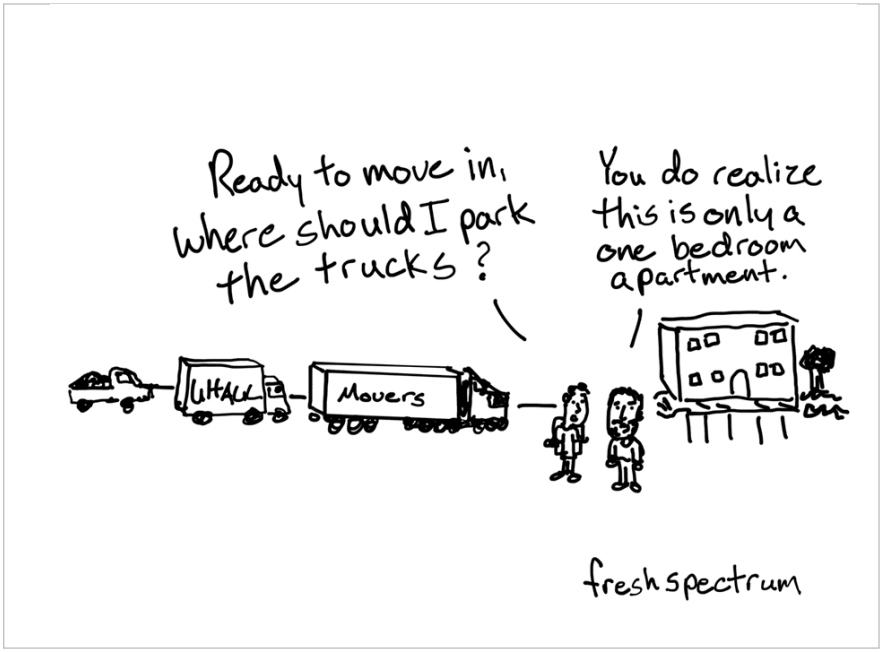
DATA MIGRATION

› Once upon a time in the West!

DATA DYNAMICS

What a beautiful analogy for data migration, isn't it?

You're thinking not? Let me explain...



When you're moving from your "home sweet home" to your new beautiful "home sweet home", you have to pack and move your stuff, a lot of stuff! And the more you will have, the longest and expensive your move will be, and everyone wants to avoid that. We're all looking for the quickest and cheapest move, but with the highest quality to preserve the integrity of your stuff.

So, the good questions are: do I still need this, do I still need that? Maybe I can loan a self-storage unit to store all the old stuff I don't want to lose or sell? What are the steps I need to follow to pack my stuff in the right boxes, to be sure the mover will store them in the right room? (I can't imagine my son opening a box with all of his sister's dolls and not finding his video game instead...!! Definitely, I don't want to live such a crisis... definitely not!)

All of these questions are legit, isn't it?

Data migration deserves the same sort of questions about the sensitivity, preparation, cost, goal and result. Let me walk you through what is data migration, why it's so special and how to deal with it with pace and peace!

Heraclitus was a Greek philosopher of over 2500 years ago. These kinds of early philosophers were astute observers of nature, probably because they did not have the distractions of personal electronic devices and the media we consume. Heraclitus was standing by a river one day, watching the stream. He observed "you cannot step into the same river twice, for fresh waters are ever flowing in upon you." Based on that observation, he also said something that might apply to hydraulics and the nature of today's world of work, including the data migration requirements. The statement below is translated from the same Greek words: "Everything flows, nothing stands still".

What are the consequences for organizations in this dynamic and ever-changing world?

Well, to survive, they will have to redefine themselves and adapt at an ever-increasing pace. To do this they will be updating their technology on a regular basis. Underpinning these technological updates will be a data migration.

A data migration is a crucial operation within any enterprise and failure can be catastrophic. Data migration projects have historically a tendency to fail. According to Bloor Research, as many as 60% do not succeed. What are the characteristics of the 40% who successfully complete a data migration project and what process have they followed?

There is more than one way to build a data migration strategy. An organization's specific business needs and requirements will help establish what's most appropriate. However, most strategies fall into one of two categories: "big bang" or "trickle."

“Big Bang” Migration

In a big bang data migration, the full transfer is completed within a limited window of time. Live systems experience one downtime while data goes to the new system. The pressure, though, can be intense, as the business operates with one of its resources offline. This risks a compromised implementation.

“Trickle” Migration

Trickle migrations, in contrast, complete the migration process in phases. During implementation, the old system and the new are run in parallel, which allows multiple and short downtime or operational interruptions. Processes running in real-time can keep data continuously migrating.
Compared to the big bang approach, these implementations can be fairly complex in design. However, the added complexity — if done right — usually reduces risks, rather than adding them.
Moving important or sensitive data and decommissioning legacy systems can put stakeholders on edge. Having a solid plan is a must; Each strategy will vary in the specifics, based on the organization’s needs and goals, but generally, a data migration plan should follow a common, recognizable pattern:

1. Explore and Assess the Source
Before migrating data, you must know (and understand) what you’re migrating, as well as how it fits within the target system. Understand how much data is pulling over and what that data looks like.
Ask yourself what needs to migrate over, what can be left behind, and what might be archived (and not migrated).
If an organization skips this source review step, and assumes an understanding of the data, the result could be wasted time and money on migration. Worse, the organization could run into a critical flaw in the data mapping that halts any progress in its tracks.

2. Define and Design the Migration
The design phase is where organizations define the type of migration to take on — big bang or trickle. This also involves drawing out the technical architecture of the solution and detailing the migration processes.
Considering the design, the data to be pulled over, and the target system, you can begin to define timelines and any project concerns. By the end of this step, the whole project should be documented.
Most of all, estimate realistically. Do not underestimate the complexity of the data migration. Many time-consuming tasks accompany this process, which may be invisible at the project’s beginning.
During planning, it’s important to consider security plans for the data. Any data that needs to be protected should have protection threaded throughout the plan.

3. Build the Migration Solution
It can be tempting to approach migration with a “just enough” development approach. However, since you will only undergo the implementation one time, it’s crucial to get it right. A common tactic is to break the data into subsets and build out one category at a time, followed by a test. If an organization is working on a particularly large migration, it might make sense to build and test in parallel.

4. Conduct a Live Test
The testing process isn’t over after testing the code during the build phase. It’s important to test the data migration design with real data to ensure the accuracy of the implementation and completeness of the application.

5. Execution/Transition
After comprehensive testing, the time comes to run the migration. At some point after the data has been migrated, decide when to move to the new system and, where appropriate, retire the old system. During the execution phase, audit trails and logs will be created to ensure that all data has been correctly migrated and, when appropriate, that the correct synchronization has been achieved. Finally, after reviewing the audit trails and logs, you will be prepared to make the decision to transition users to the new system. Note that although audit trails and logs are invaluable, it also may be worth profiling the current source and target systems to ensure synchronization is correct.

Even though data migration has been a fact of IT life for decades, horror stories are still reported every year. Here are the top challenges that companies encounter in moving data:

- **Not contacting key stakeholders.** No matter the size of the migration, there is someone, somewhere who cares about the data you're moving. Track them down and explain the need for this project and the impact on them before you get going on the task. If you don't, you'll certainly hear from them at some stage, and chances are good that they'll disrupt your timeline.
- **Not communicating with the business.** Once you've explained the project to the stakeholders, be sure to keep them informed of your progress. It's best to provide a status report on the same day every week, especially if things get off track. Regular communication goes a long way in building trust with all those affected.
- **Lack of expertise.** Although this is a straightforward task, there's a lot of complexity involved in moving data. Having an experienced professional with excellent references helps the process go smoothly.
- **Lack of planning.** On average, families spend 10 to 20 hours planning their vacation, while IT teams may spend as little as half that time planning a small data migration. Hours spent planning don't always guarantee success but having a solid data migration plan does save hours when it comes to actually moving the data.
- **Insufficient data prep software and skills.** Invest in first-class data quality software and consider hiring a specialist to assist. Good news: StorageX exists!!!! J
- **Unproven migration methodology.** Do some research to be sure that the data movement procedure has worked well for other firms like yours. Resist the temptation to just accept the generic procedure offered by a vendor.
- **Cross-object dependencies.** With the technology and capabilities of data management tools available today, it's still shocking to learn about a dependent dataset that wasn't included in the original plan. Because cross-object dependencies often are not discovered until very late in the migration process, be sure to build in a contingency for them so that your entire delivery date isn't thrown off.

With that said, we can outline Best Practices for Data Migration

Back up the data before executing

In case something goes wrong during the implementation, you can't afford to lose data. Make sure there are backup resources and that they've been tested before you proceed.

Stick to the strategy

Too many data managers make a plan and then abandon it when the process goes "too" smoothly or when things get out of hand. The migration process can be complicated and even frustrating at times, so prepare for that reality and then stick to the plan.

Test, test, test. Remember: "Hard in training, easy in battle!"

During the planning and design phases, and throughout implementation and maintenance, test the data migration to make sure you will eventually achieve the desired outcome.

Encourage business engagement

The backing of senior business leaders will improve the chances of a data migration project going smoothly and ensure that the team has the necessary resources. The key is to communicate that the purpose of the migration is to make the overall business more effective and efficient.

I hope this blog story will be helpful in your data migration journey.

And remember that an amazing stellar product exists in the market to help you, StorageX is here to make your life easier! ;-)

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