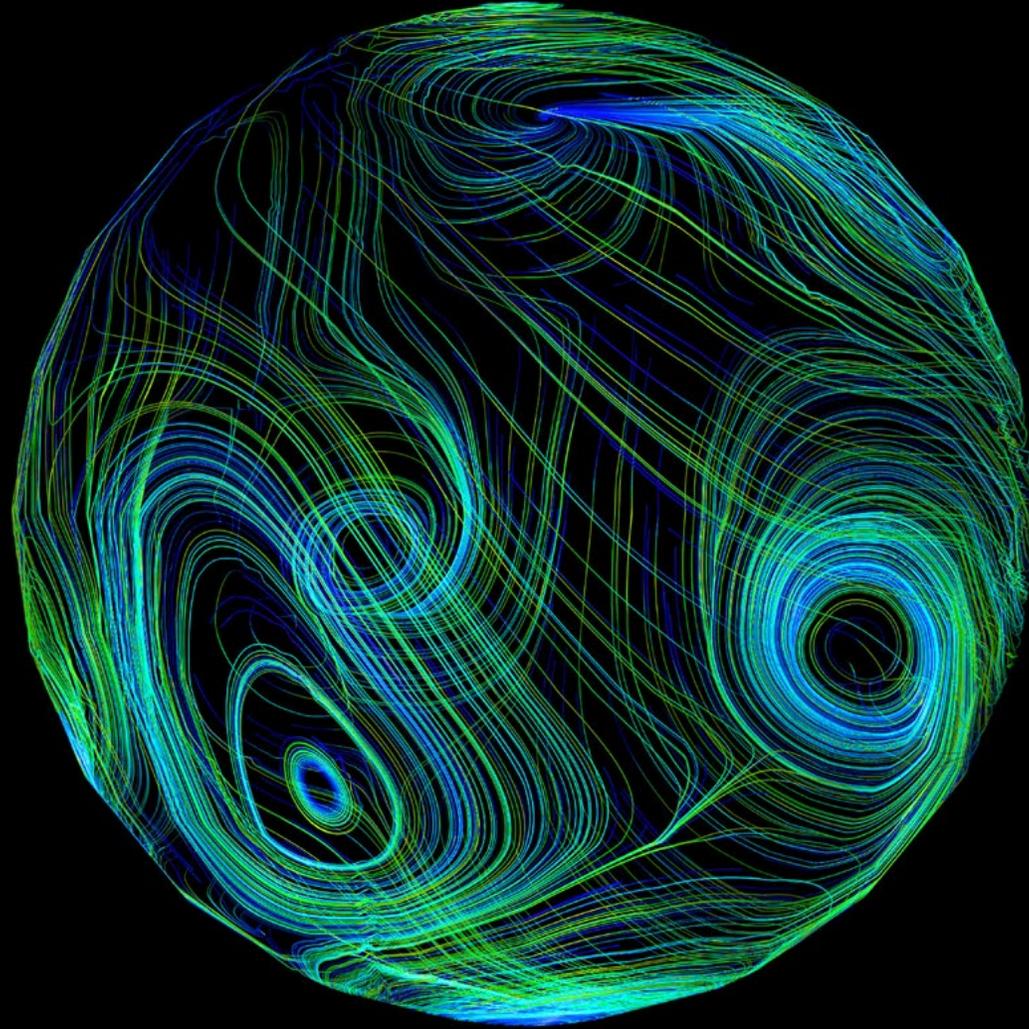


Deloitte.



At-scale migration
Five lessons for success

When a large-scale tech migration goes well, no one knows. But when it doesn't—everyone does, and everyone across the organization feels the pain.

Executing a successful hybrid datacenter transformation is challenging, and knowing how to structure a technology migration to execute it at-scale is a daunting task. When a business decides to take on the burden of migration, it's often doing it for the first time, and generally doesn't have previous learnings to draw from or a map tailored to its specific technology landscape to follow. Migration methods are well documented and standardized, but clients' technology portfolios and internal processes differ wildly.

While each client's migration challenges are different, we've shared a few key lessons from a two-year client engagement that can inform any at-scale migration and help smooth what can be a rocky path for any organization.

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The challenge

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What Deloitte did

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Five lessons learned

1. A master migration schedule and execution structure are table stakes.
2. Application bundling is an art—and a science. Do not fall in the mega-bundle trap.
3. Understand the risk, and practice for failure.
4. Don't forget about the end user.
5. Understand your technology estate before you move it.

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The path forward

The challenge



A major financial services company had three goals when it engaged with Deloitte:

- **Eliminate its aging datacenters**
- **Replace them with a best-in-class hybrid datacenter while embracing cloud**
- **Better position their growing business for the future.**

The client faced multiple challenges, including only tribal knowledge of its vast application portfolio, as well as years of technical debt. Our client saw the potential in a hybrid target state of Amazon Web Services and two newly built co-lo facilities that would shrink their physical datacenter footprint, embrace cloud and establish a future-proof platform. Not to mention the high expectations that come with funding and the board level visibility.

To successfully navigate the journey and get their transformation right the first time, they engaged an external partner. The client operates in a highly regulated and public-facing environment and is charged with moving billions in cash on a daily basis—so the execution had to be flawless.



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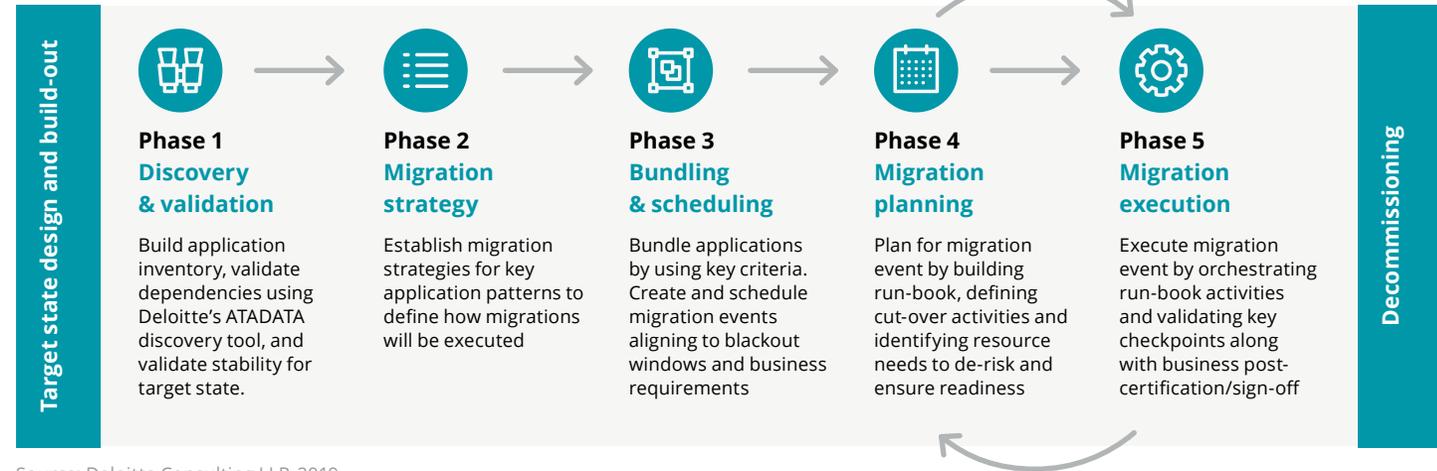
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What Deloitte did

Working with the client, Deloitte managed and executed a full-service migration program end to end, from designing and building the datacenters to migrating thousands of the client's workloads. The target-state datacenter incorporated best-in-class technology choices such as increased automation, AWS adoption, greater resiliency, and network segmentation to minimize the blast radius. In parallel to datacenter design and build, our Deloitte team launched our industry-proven five-phase migration methodology to plan and execute the migration. The plan encompassed migrating a variety of major platforms, including web, mainframe, shared services and trading platforms, as well as third-party products.

Deloitte's migration methodology



Source: Deloitte Consulting LLP, 2019

Migration planning/execution

1500+
Total bundles

30+
Migration events

99.5%+
Success rate

Stakeholders engaged

75+
Core working Team

500+
Extended migration teams

30+
Key leaders/
stakeholder



Five lessons learned

1 A master migration schedule and execution structure are table stakes.

This may seem obvious, but workload migrations can't be undertaken without a clear structure for execution and a plan that has alignment across all stakeholder groups. A master migration schedule defines the sequence of events needed to migrate applications while minimizing business disruption. In our engagement, building a migration schedule took participation across the executive suite and business units.

- **Establish your pace.** We used Deloitte's Migration Velocity Calculator to estimate how many concurrent migration events were needed while staying within the constraints of client resource capacity and their appetite for change.
- **Understand when you need to freeze.** Those managing the migration need to have the full picture of the business's requirements and priorities. Knowing key events on the

business's calendar, like a major deadline or busy season, will help IT teams understand the least volatile times to perform a migration. Likewise, understanding what applications and platforms have a broad client impact should guide your migration schedule. Align with your change management team as well.

- **Recognize the business is not static.** Given Deloitte's multi-year plan for this effort, we made sure to build in an "open-enrollment" period to refine the schedule as the migration progressed. This gave us a chance to engage with the business, revisit priorities and incorporate their constantly evolving needs. Just as important, this gave the IT and business teams adequate time for buy-in and sign-off.

- **Structure helps enable execution.** Having a well-defined resource coverage plan, execution construct and escalation hierarchy can help avoid chaos in tense moments during the migration. Identify named resources with contact information and support functions to make sure the right resources are available.
- **Communicate.** Overcommunication is better. Keeping executives informed is vital, especially when the events aren't going as planned. We used an omni-channel approach, using forums such as fireside chats, town halls, published FAQs, and frequent emails and newsletters. Establishing check-ins during key points of the migration was critical to maintain leadership buy-in, as well as to manage their expectations.



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Five lessons learned

② Application bundling is an art—and a science. Do not fall in the mega-bundle trap.

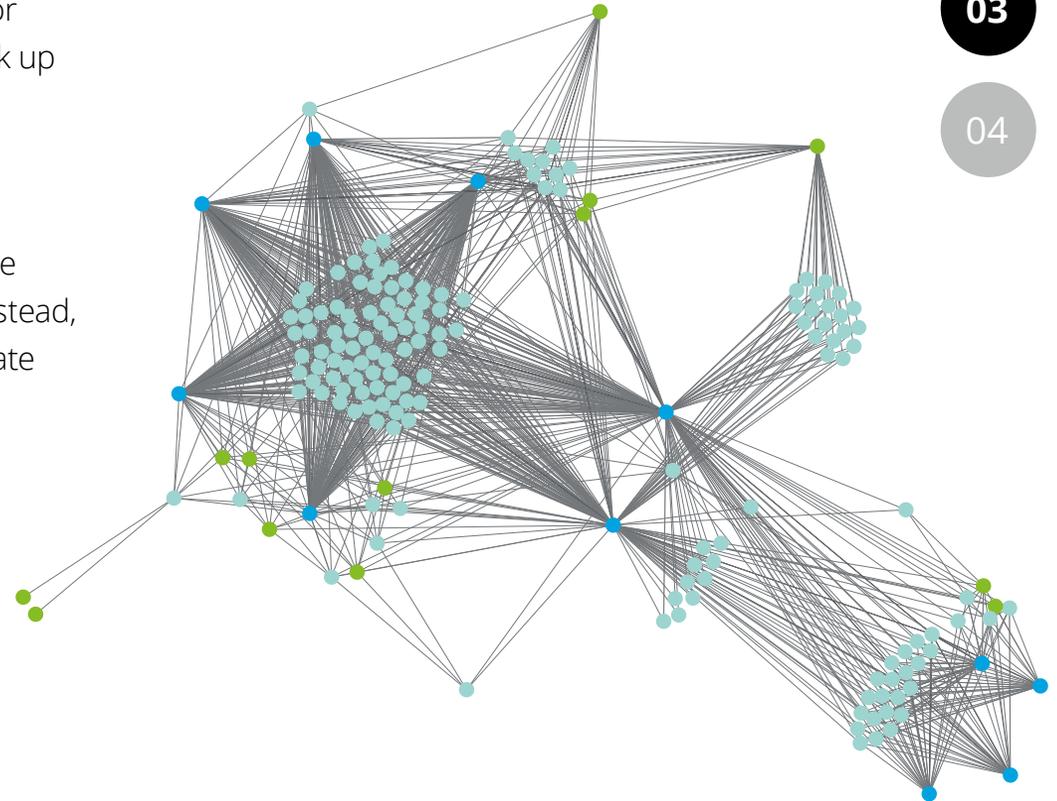
Our client, like many others, had tightly coupled systems with common shared services and platforms—all told, nearly 100,000 dependencies. Understanding and mapping the dependencies, and retaining the bundles' integrity, was a challenge that had to be met for migration success.

- **The sanctity of a bundle should be maintained and not broken—except when it's too big to fail.** Our initial position bundled all external web platforms and mainframe in a single migration event due to potential latency, which, given the migration's size and complexity, would have been a big risk to take. After remediating the latency drivers, we successfully decoupled

the applications and segregated the mainframe into its own bundle. Look for opportunities to mitigate risk and break up the bundles when necessary.

- **Be choosy.** Foundational and shared services, like content repositories and platforms-as-a-service (PaaS), should be excluded from application bundling. Instead, build those out as part of the target state before executing the migration.

Avoid the mega-bundle trap



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Five lessons learned

3 Understand the risk, and practice for failure.

There is no one-size-fits-all plan for any migration, and one particular challenge is understanding the client's unique exposures to risk and risk tolerance. Seeing the business's needs and risk profile from all sides is key to success.

- **Decentralize accountability for critical events.** Instead of managing everything centrally through the program command center, we implemented a decentralized structure with an IT and business partner arrangement. They served as the point of contact for their sub-division on all program activities including signing-off on migration schedule and post-certification efforts.
- **Get the right people on board for triage.** We developed a resource coverage plan covering all disciplines and implemented a breakout line structure to triage and deep-dive on migration issues. This enabled us to pull in the right senior experts to address concerns in real time.
- **Partner with the business early and often.** Engage with business teams early to identify critical applications and portfolios that need special care during the migration process, and plan to provide white-glove service for those workloads.
- **Optimize for client experience.** Migrations often suffer an outage of some sort. But for our client, which conducts business every single minute of the day, posting maintenance pages or being unavailable to customers was not an option. Working with the client, we engineered a cloud-based solution and integrated that into our plan to use during key migration events so clients could access their accounts without disruption.
- **Practice, and practice again.** We did migration rehearsals for our most critical events, which helped the teams document failback approaches, improve accuracy, get precise timings, and build muscle memory.



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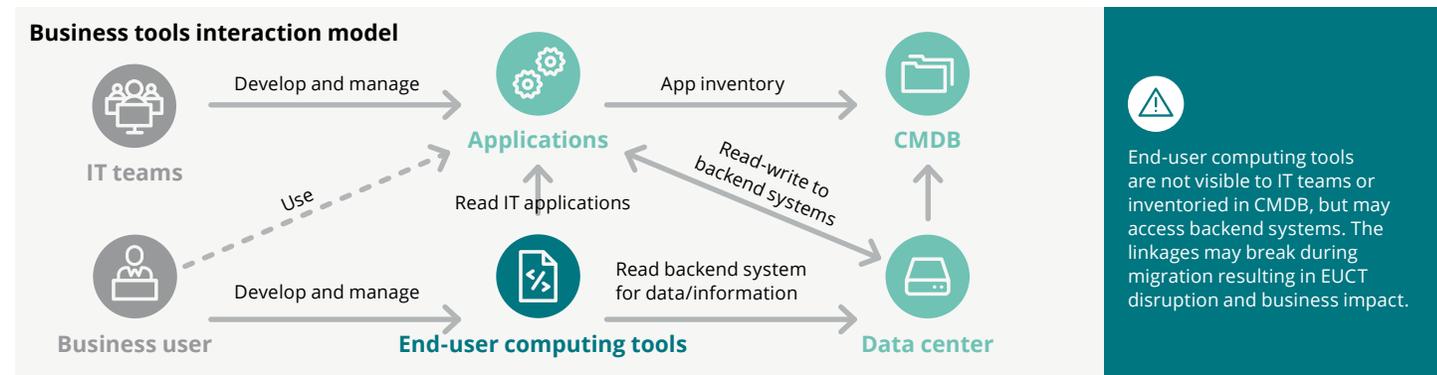
Five lessons learned

4 Don't forget about the end user.

Don't forget that business units may be using home-grown tools such as macro-enabled spreadsheet and databases to perform business functions. These tools may have application dependencies that may break during migration (e.g. static IP) and need to be factored into your migration strategy.

- **Inventory your business tools.** Dedicate time and effort to identify all business tools in use, define them, and determine their application complexities. This client did not have a pre-built inventory of business tools in use, nor did IT teams have a clear picture of what applications those tools depended upon. Categorizing the tools based on complexity, criticality or other relevant business levers can help.

- **Rank your business tools and focus on the ones that matter most.** The number of business tools in use is likely overwhelming, and teams need to define a framework and assess these tools for the associated business risk. We put tools into four buckets as: Mission Critical, Business Essential, Business Core and Business Supporting. Knowing each tool's use can help define the risk you may incur.
- **Mission-critical business tools must be treated with care.** Businesses use these tools to support mission critical business operations.. Any disruption to these tools can have significant business implications. IT teams need to know the EUCT criticality before the migration begins and treat these tools like IT applications, leveraging testing and contingency methods in case of disruption in service.



End-user computing tools are not visible to IT teams or inventoried in CMDB, but may access backend systems. The linkages may break during migration resulting in EUCT disruption and business impact.



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Five lessons learned

5 Understand your technology estate before you move it.

Few clients understand their technology landscape to the extent needed for migration. Tribal knowledge is not enough. Take stock of your applications, networks, and dependencies.

- **It's all complex. And it's likely going to get more tangled.** As technology portfolios become more complex, few clients truly see the lay of the land. Most rely on tribal knowledge, but that can be a prescription for a failed migration. An accurate and exhaustive asset inventory is needed.

- **The knowledge gaps will continue throughout the migration if you don't solve for them.** With this client, we used a T-12 window, meaning we kicked off 12 weeks before the migration, with a set of workbooks and activities that needed to be completed each week. We often received incomplete workbooks because of that knowledge gap, which put stress on the cadence leading up to the migration.
- **Don't underestimate the effort it takes to know your tech estate.** The discovery and validation phase of your migration is foundational to its success. With this client, we spent multiple months doing initial data discovery. Post validation, we established a systematic approach to keep the asset inventory up-to-date. Give it the time and rigor it deserves, and a governance framework is vital to enforce discipline.

Total scope

3,500+
Application instances

5,000+
OS instances

1,300+
Databases

20PB+
Storage

1,000+
Mission-critical business tools

80–20k_{sq.ft.}
Datacenter footprint



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The path forward

We were able to achieve a migration success rate of 99.7 percent, with no business disruption during any event. It took immense planning and coordination, and the stakes were high: we knew we needed to get it right the first time to help the client keep the business running. As we've shown, at-scale migrations can be perilous territory. To navigate the waters, you may consider engaging with an external partner who can look at your business objectively and advise you without bias or being beholden to internal practices, norms, or politics. With these lessons in mind, and a partner to help along the way, an enterprise-wide migration could be as uneventful as—well, just another day at work.

Let's talk

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