



# 3 Innovations Disrupting the Technology Migration Process



## In This Paper

- Migrations and upgrades present significant uncertainty to enterprises.
- The right architecture is the only way to build a foundation for a successful technology project.
- Bringing specialists into the migration process enables the organization to focus on its unique business and IT challenges.

Datamation®  
Executive Brief

Take a moment to visualize two or three of your most complex legacy databases – the ones that you most urgently need to update to the latest technology. Whether you are facing challenges from small or non-existent maintenance windows, lack of staff expertise, or other risk factors, migrations and upgrades never seem to end up being as straightforward as you would like them to be.

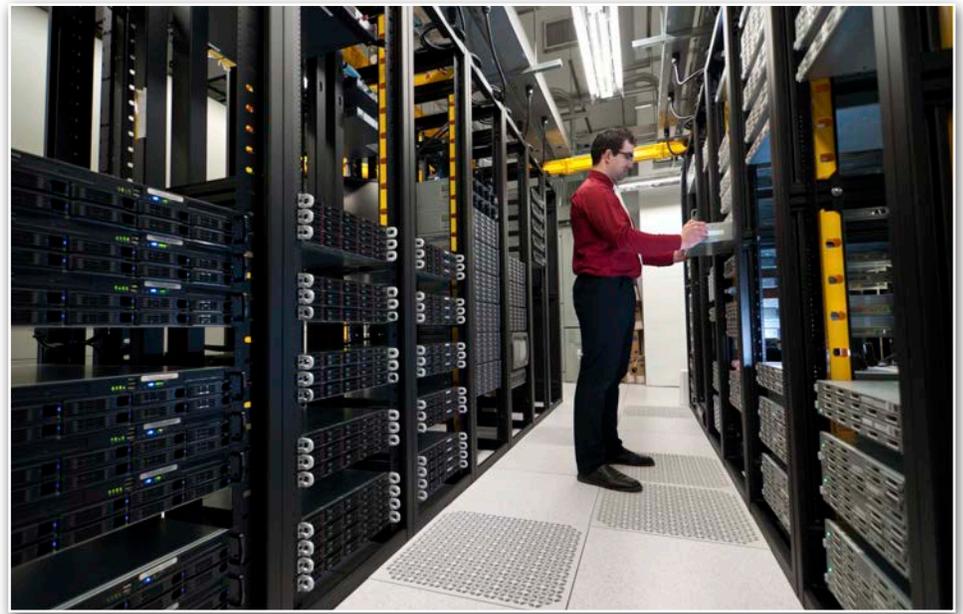
Now imagine that you woke up tomorrow morning and found that these databases had been migrated overnight, correctly, and with no impact to the business.

With the right expertise, it's possible to radically rethink the standard migration and upgrade process in such a way that both the business and IT realizes substantial benefits. This Executive Brief highlights three key innovations that radically improve speed, efficiency, and security when migrating your critical data and applications.

### Managing Uncertainty in Your Migration Project

Maybe critical software just reached end of life or a key hardware platform is fully depreciated. Or perhaps the business is demanding new capabilities, or the data center is mandating consolidation and other efficiencies.

Regardless of the business and technology drivers for your migration



– and regardless of the business and technical risks for your migration — one universal truth is that migrations and upgrades can present substantial uncertainty. This uncertainty can result in a minor speed bump or an expensive outage, depending on an organization's skill set and appetite for risk.

Typically, there are six primary areas of risk that present challenges in a migration:

- **Lack of Skill With New Technology:** IT staff and end users have built up a skill set around their legacy technology – but the new technology is frequently unknown. IT also rarely has a solid skill set around the migration process itself.
- **Lack of a Roadmap:** There are a number of unknowns in any migration or upgrade, which can make an accurate timeline and level of effort nearly impossible to develop.
- **Lost Productivity:** No matter how smooth the migration, productivity will take a hit. During the migration, the enterprise is operating in dual states, with both the old and the new technologies in use. The longer the migration, the more productivity is impacted, as resources are sidelined into migration-related tasks and duplicate systems need to be updated.
- **Disruption to the Business:** Unknowns have a frightening potential to cause downtime, and potentially a substantial business impact.
- **Data Risks:** The longer the migration period, the greater the risk that some data will be corrupted, lost, or start to drift apart (when two duplicate systems are running side by side). If something goes awry in the migration, there is also worry that IT will be unable to reverse the change or reset it so the

data is restored to its original state. There are also security concerns around the data. If a third party is involved with the migration, data may not remain on premises and might not be secured properly, leaving it open to exposure.

- **Other Uncertainties:** Other enterprises may struggle with uncertainty around what resources the migration will take and what the final cost will be. Still others may be overwhelmed by the planning, testing, and general ambiguity and uncertainty around what it will take to move.

All too often, as organizations try to balance speed and risk, they are forced to slow down and proceed with caution – even though a faster, more precise migration can substantially reduce risk. Therefore, rather than letting risk, cost, delay, disruption, and general uncertainty play an outsized role in the migration, it's critical to shift the balance of power back to productivity, business-IT alignment, efficiency and security.

### 3 Disruptive Innovations

Every migration follows the same high-level process. We'll do a quick review of the process and then discuss where radical innovations have the opportunity to deliver substantial improvements to the migration.

- **Phase I, Discovery:** Identify business goals, technology drivers, and anticipated challenges — with an eye toward balancing available resources with needs and expectations.
- **Phase II, Analysis:** Confirm which elements are in and out of scope, as well as any critical success factors or dependencies, including transition planning.
- **Phase III, Migration:** Once the planning is complete, it's time to execute tasks and tests and monitor the health of the project.
- **Phase IV, Transition:** Even after the migration is up and running, the transition process is still critical to success. An organization must ensure

objectives are met and that IT and end users have the right training to be effective on the new system.

Each of these phases brings its own set of challenges and potential pitfalls. Understanding what must be done at each stage and following best practices provides a well-constructed bridge over the migration chasm, enabling even the most risk-averse of enterprises to cross safely.

By incorporating these three innovations into your next migration project, your enterprise can think offensively – and push through with confidence to the benefits you will achieve from your new technology investment.

#### 1. Innovation: Architecture Review and Optimization.

Architecture is a crucial missing or under-represented component in many troubled migrations. Migrations to new technologies and systems enable new features, new configurations, and an opportunity to drive significant consolidation. Migrations are fundamentally an

*“All too often, as organizations try to balance speed and risk, they are forced to slow down and proceed with caution – even though a faster, more precise migration can substantially reduce risk.”*

architecture problem, although they are often not seen that way.

Developing the right architecture is the only way to build a foundation for a successful technology project. When an organization recognizes architecture as a key innovation that substantially increases the likelihood of a successful migration, it recognizes the need to:

- Validate architecture, review designs and share best practices. This will reduce risk and accelerate time to value.
- Identify architectural pitfalls upfront to prevent disruptions to critical business functions.
- Create cohesive architectures and processes across multiple technical domains – from storage and servers to infrastructure, technology and applications.
- Establish enterprise and solution architecture governance models and processes.
- Recognize shared services and common frameworks that support the operating model.

### 2. Innovation: Dedicated Migration Expertise.

Even the most advanced IT staff may not have intimate knowledge of every new software product or system on the market.

And critically, very few IT organizations have the skill set for the migration



process. The typical IT staff and other in-house resources have been involved with, at most, a handful of migrations, which likely are inherently different from each other and thus have few similarities. This results in a reliance on internal “tribal knowledge” and intensely manual interventions, which introduces a great deal of risk for potential mistakes.

When specialists are brought into the migration process, the organization can focus on its unique business and IT challenges, while allowing dedicated experts to handle advanced configuration features and other “gotchas.” With the right combination of skills across the complete lifecycle of the migration project – architecture, planning, assessment, data collection, testing, and production cutover – using skilled migration specialists who have been there, done that can provide an invaluable benefit to the overall success of the project.

### 3. Innovation: Assembly-Line Automation to Increase Speed and Accuracy.

A typical migration is complex, hard to track, and labor intensive. Incorporating the right automated tools and scripts can help reduce migration risk and deliver efficient and accurate solutions. Automation can also reduce the length of the migration process, deliver more repeatable and accurate migrations based on historical data and best practices, and enable the significant benefit of real-time project monitoring.

Automation typically takes the form of tools to analyze source objects and data as well as tools that automatically deliver a highly accurate level of effort estimates, standardized migration scripts, and post-migration validation. When automation is used throughout the entire process, before any bits are ever moved from the current

to the new system, an organization can realize substantial benefits. For example, discovery tools that capture information about assets to be migrated and then use a comprehensive set of business rules to provide an accurate scope and a detailed migration plan (including timeframe and pricing estimates) can help an organization have a much clearer picture of exactly what a migration will entail before ever getting started.

*“Product specialization backed by more than 25 years of experience with migrations enables Oracle to deliver faster and more accurate projects that take advantage of migration experts ”*

### Choosing Among the ‘Experts’

When choosing a vendor, enterprises should keep four basic tenets in mind:

- 1. Choose a provider that best meets your IT model and resources** — Determine how much of the migration can be done in-house vs. by a third party as well as the level of support needed after the migration is complete.
- 2. Choose a provider that offers the geographic flexibility you need** — For an enterprise that operates globally, having 24/7 support during a migration and beyond is critical. Oftentimes these enterprises require both U.S.-based and off-shore support.
- 3. Choose a provider that is flexible in how and where services are delivered** — On-premises or off-premises? On-shore or off-shore? For enterprises unsure of all of the details of the support and services they will need, choosing a vendor

that is flexible in how and where services are delivered will make the migration flow smoother.

- 4. Choose a provider whose security capabilities meet your needs** — The two biggest potential security risks during any migration are data leaving the environment or being exposed. To prevent this, be sure to choose a vendor that can connect directly into your environment and do the migration there, allowing both the data and the infrastructure to remain in its native environment.

and cost less with the automated tools and product expertise of Oracle Migration Factory.

The Oracle Migration Factory is a complete package that provides dedicated expert processes and methodology. Migrations are completed faster and more securely within the customer’s environment, resulting in lower risk and lower cost. Oracle’s product experience and proven delivery methodology mean a smooth transition and knowledge transfer.

Product specialization backed by more than 25 years of experience with migrations enables Oracle to deliver faster and more accurate projects that take advantage of migration experts dedicated to specific technologies – whether it is database, middleware, or hardware systems. Oracle offers unique and customized processes for full migrations, upgrades, consolidations, and any combination of the three. Finally, after the migration is complete,

### What Oracle Offers

Using a proven factory approach and best practice migration processes, the Oracle Migration Factory reduces traditional risks and costs associated with migration projects by making the process automated, repeatable, measurable, monitorable and flexible. Migrations are faster, more accurate,

Oracle offers a pipeline of unparalleled support and product knowledge.

### Successful Migrations in Action

---

Oracle's extensive migration experience spans a wide spectrum and includes many migration scenarios. Consider this recent example in which Oracle Consulting migrated a customer that was running Oracle Database on IBM hardware to an Oracle-engineered hardware platform. The automation and skilled expertise Oracle brought to the table provided the enterprise with a far quicker and less costly migration than it would have otherwise had.

Using the skill set of the Oracle Consulting delivery organization, the customer migrated about 50TB of data in multiple instances of Oracle Database and homegrown

custom applications running on POWER systems to Oracle Exadata, which Oracle had also installed and configured. To ensure a successful migration, Oracle planned the architecture, implemented database consolidation strategies and platform-specific optimization, and rolled out ZFS Appliance for backup.

During the course of the migration, the enterprise also upgraded from Oracle Database 10g to 11g and changed its operating system from AIX to Oracle Enterprise Linux. Oracle took care of all software installations and patching, and it manages backups and monitoring as needed.

Enterprises with migrations of a similar complexity and scale that follow a similar set of activities using these tools should assume a three to six month migration period from

project inception to live in-production environment.

### Conclusion

---

An organization needs many critical components – including business and executive buy-in, architecture, planning, expertise, and tools – to go right for a complex migration or upgrade to be successful. Oracle Migration Factory is a radical innovation that can substantially increase your ability to deliver a successful migration on time and on budget.

Learn more about Oracle Migration Factory at <http://www.oracle.com/us/products/consulting/migration-services/index.html>. ■