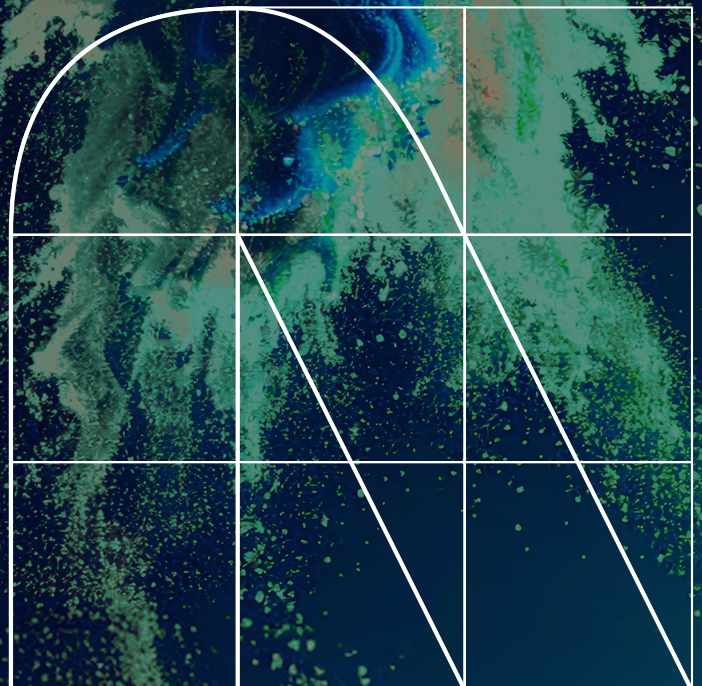


Cloud transformation in the age of AI: The evolution of lift and shift

Simply moving workloads is no longer
enough — but AI-driven transformation
unlocks the true power of the cloud



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Why the old playbook no longer works

Not long ago, the “lift and shift” approach to cloud migration sounded like the easiest path forward. Take your applications as they are, lift them out of the data center, drop them into the cloud and call it a day.

But organizations that rushed into lift and shift without a good roadmap often ended up disappointed. Instead of unlocking agility, innovation and cost savings, they discovered new headaches: ballooning bills, performance issues and systems that were no easier to manage than before.

Many are now turning to cloud experts like NTT DATA and asking: “Can you fix what went wrong?”

The timing couldn't be more critical. Ongoing shifts in the market — such as Broadcom's 2023 acquisition of VMware, whose widely implemented enterprise virtualization software allows multiple operating systems and applications to run on a single physical server — can lead to unexpected base cost changes for organizations as licensing structures change.

At the same time, data center strategies are shifting. CIOs and CFOs alike are seeing data centers as expensive real estate, not a source of competitive advantage. Add in the relentless pace of AI and its dependence on cloud-native architectures, and it's clear that standing still is not an option.



Why lift and shift falls short

So, why do lift-and-shift migrations often fail to deliver?

Let's imagine a bank that decides to move its entire core banking stack — thousands of workloads — into the cloud overnight, with no rearchitecting, refactoring or modernization. Within months, they're dealing with:

- **Unexpected costs:** Servers that once ran 24x7 in a data center now incur cloud costs around the clock. There was no cloud right-sizing or optimization, so instead of savings, the CFO faces cost overruns.
- **The limitations of legacy architectures:** Old, monolithic applications remain just as rigid as before. Moving them didn't magically make them agile.

- **Operational strain:** The bank lacked cloud-native management skills, leading to inadequate testing, misconfigurations, outages and rework — not to mention poor usage and cost tracking.
- **Missed opportunities:** Without tapping into cloud-native services — think AI, automation and containerization — the migration produced little more than “the same, just elsewhere.”

Lift and shift is popular because it's quick and relatively easy, and it gives IT leaders the satisfaction of saying, “We're in the cloud.” But without strategic transformation, the value is always going to be shallow.

CIOs who once thought migration was the hard part are now learning that the real work comes with modernization.





The rise of the cloud transformation factory

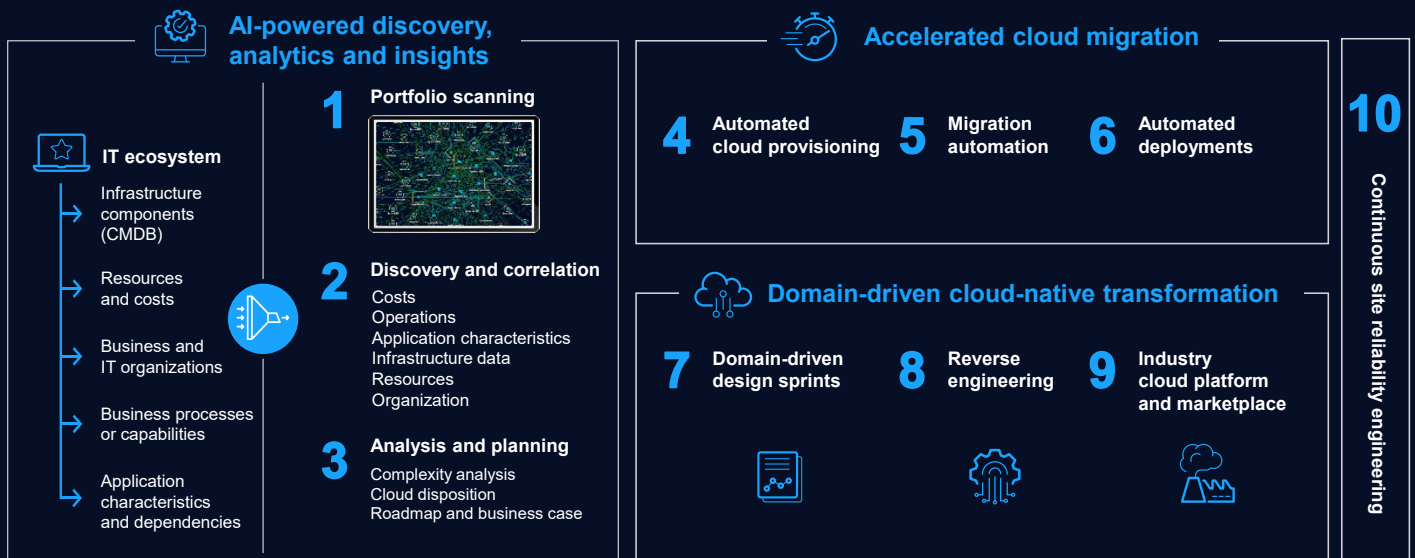
If lift and shift is fading, what comes next? Enter the cloud transformation factory.

Unlike the old concept of a “cloud migration factory”, this approach goes beyond moving workloads by also modernizing them along the way. It’s a deliberate shift in mindset that makes transformation the end goal.

Where cloud migration factories were built for speed and repetition at scale, with fixed playbooks and limited flexibility to address an organization’s unique needs, a cloud transformation factory involves a more agile approach to meet those needs in innovative ways.

Think of it like moving house. You could box up everything — old furniture, broken appliances and clutter — and dump it in your new home. Or, you could take the opportunity to sort, upgrade and redesign. This is what transformation is about: Carry forward only what makes sense, refresh what doesn’t and set yourself up for a better future.

A cloud transformation factory includes every phase of the transformation journey, from AI-powered discovery and the actual migration to cloud-native transformation and ongoing support thereafter:



In the next section, we explore some of the components of the cloud transformation factory in more detail, and how to incorporate AI and modernization into your transformation processes.

What cloud transformation looks like in practice

At NTT DATA, we've seen firsthand that our clients don't just want their workloads lifted and shifted. They want the cloud to work for them — by combining migration with modernization, supported by automation and AI.

This doesn't always have to be a single action. Some circumstances, such as a hard date for a data center exit or a limited capital budget for a legacy hardware technology refresh, will force a simple rehosting of workloads and applications, followed by a separate phase of modernization. Ideally, the cloud migration service provider would already identify which applications to modernize during the initial migration and then coordinate a roadmap with business leadership based on time, cost and business value.

To migrate and modernize workloads in the most effective way, NTT DATA maintains partnerships with major cloud providers around the world. For example, Amazon Web Services (AWS) offers the scale, tools and cloud-native capabilities that empower organizations to modernize workloads, while we contribute the expertise and frameworks to turn that potential into reality.

For example, we recently migrated 125 workloads and 158TB of data to AWS within two months for Honda Trading Asia, lowering their infrastructure costs by 24%, improving security and making their operations scalable across seven Asia-Pacific countries.

Transformation in action

So, what would cloud transformation (combining migration and modernization) entail if you are an AWS client? Let's look at some of the processes that are involved:

- **AI-assisted discovery:** Using tools that use AI to automate the discovery and analysis of workloads, quickly map application dependencies, data flows and infrastructure complexity. Instead of relying on guesswork, AI identifies which applications to rehost, replatform or refactor. AWS Application Discovery Service and AWS Database Migration Service are useful tools in this context.
- **Smart data classification:** Sensitive data is tagged and secured from day one, using tools like Amazon Macie — a fully managed AWS security service that uses machine learning and pattern matching to discover, classify and protect data — and AWS Database Migration Service for compliant migrations.
- **Intelligent dependency mapping:** There are no more surprises when one workload breaks because another was overlooked. With AI-driven mapping, migrations happen with foresight. Using tools like AWS Application Discovery Service makes the mapping process faster and simpler.
- **Automated compatibility assessment:** Before workloads land in the AWS Cloud, an automated assessment checks whether they'll work as intended.
- **FinOps guardrails:** CFOs want to know the before-and-after economics. FinOps unites financial accountability and engineering decisions to optimize cloud spending while maximizing business value. Pre-migration forecasts and post-migration cost tracking help keep budgets in check.
- **Predictive workload optimization:** Machine learning fine-tunes cloud resources so organizations don't pay for idle capacity. In the AWS Cloud, AWS Compute Optimizer recommends ways to optimize the performance and cost of these resources, while tools like AWS Cost Explorer visualize costs and usage over time to assist with resource forecasting.

- **Code refactoring:** Legacy applications are modernized to be cloud-native, often assisted by AI-powered coding tools like Amazon Q Developer and AWS Transform, the first agentic AI service for the modernization of .NET, mainframe and VMware workloads.
- **Accelerated DevOps enablement:** Teams are equipped with the tools (including AI and automation) and practices they need to build, test and deploy applications in the cloud, enabling fast but reliable and secure delivery. Products like AWS CodePipeline, AWS CodeBuild and AWS CodeDeploy come into play here.

Of course, migration isn't a one-time event. Cloud-native workloads have to keep evolving to stay secure and efficient. Ongoing modernization is supported by tools like AWS Migration Hub Refactor Spaces and AWS Compute Optimizer, with AI-enabled testing and validation at all stages.

And, throughout the transformation journey, automated security and compliance checks are nonnegotiable, using AWS Security Hub, Amazon Inspector for vulnerability management and AWS Config for configuration tracking and control.

A snapshot of the future

Imagine an energy company facing skyrocketing licensing costs for their current virtualization suite. Instead of another renewal, they decide to migrate strategically into the AWS Cloud.

- **Phase one:** Critical workloads are rehosted with minimal disruption.
- **Phase two:** AI-assisted tools flag which applications can be containerized, which can be replatformed and which should be retired altogether.
- **Phase three:** Predictive analytics streamline workloads, security is automated and compliance is baked in.

The result? Lower costs, more agility and a platform ready for AI-driven innovation. This is the kind of outcome we're already delivering today.

Why NTT DATA



Why should you trust NTT DATA with this business-critical journey?

First, because we've done it — at scale. From global banks to healthcare providers and universities, we've helped organizations move thousands of workloads securely into the AWS Cloud and beyond. One recent project involved migrating 7,000 workloads, with AWS funding much of the cost through its Migration Acceleration Program.

Second, we don't just move workloads — we also modernize them. Our Cloud Transformation Factory combines automation, AI and deep expertise to deliver faster, more predictable and more valuable migrations. Typically, our clients benefit from:

- A 30% increase in speed to market because of improved agility
- A 25% cost reduction through a lower total cost of ownership
- A 15% improvement in experience for IT and application development teams in realizing high-quality outcomes faster and with less effort

Third, our close partnerships with technology suppliers make an important difference. We're an AWS Premier Tier Consulting Partner (with a Strategic Collaboration Agreement) and an AWS Migration Acceleration Program Funding Partner — meaning our clients often benefit from subsidized migration costs.

And finally, we take the long view. Migration is just the beginning. We stay with you through optimization, modernization and continuous improvement to ensure your cloud becomes a lasting source of competitive advantage.

Don't just migrate – transform

The message is clear: Lift and shift is no longer enough. It may offer a quick escape from data center costs or licensing headaches, but it leaves too much value on the table.

In the age of AI, cloud migration must be a transformation — a chance to modernize, optimize and future-proof.

At NTT DATA, we're uniquely positioned to help you seize this moment and reimagine your business in the cloud.

[Read more about NTT DATA's Cloud Strategy and Transformation services](#) to see how we can help your organization.



Visit nttdata.com to learn more.

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