

## Increasing Return on Investment for Moving Applications to the Cloud

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**NTT DATA Services**  
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### Introduction

At NTT DATA Digital Business Services, we believe that the current cycle of business is driven by digital. Enterprises are increasingly adopting cloud computing to achieve significant cost reduction, greater business agility and competitive differentiation in the market. Building a good business case for cloud adoption is based on various elements that include financials, investments, risks, technology, people and time, but cost is one of the most critical elements for return on investment. While cost benefits can be achieved based on the cost savings from infrastructure, software licenses and IT labor productivity, choosing the right migration path for the right application will definitely provide a better return on investment.

This paper provides quick insights into how to build the right business case by choosing the right migration paths based on cost drivers for better return on investment. It also provides insights into how to choose the right cost model for success and jump-start migration using some of our proven techniques for quick return on investment.

# Choosing Right Migration Paths

Typically, organizations who want to move to cloud define a cloud strategy in terms of choosing the right cloud models and cloud service providers based on their business and IT strategy. Organizations define their cloud readiness based on their goals, priorities, risks, return on investment, technology, platform and tools. It is imperative that organizations categorize their applications based on business criticality, predictability, usage patterns, architecture, software license and so on — and choose the right migration option for each type of application, such as:

- **Re-host or lift-shift:** Redeployment of existing applications on cloud infrastructure changing application's code and infrastructure configuration
- **Refactor or optimize:** Change of application code and configurations for open source and deployment of refactored application on cloud infrastructure
- **Re-architect:** Breaking up monolithic application functions into modular services based on distributed and modern architectures such as microservices architecture
- **Rewrite:** Rewrite existing applications leveraging cloud-native platforms such as Pivotal Cloud Foundry for accelerated delivery
- **Replace:** Replace existing applications with commercial software delivered as service to satisfy the business requirements

Different migration options provide differential cost benefits based on the infrastructure, software licenses, and IT labor productivity. Figure 1 depicts examples of different cost benefits for different migration options:

Application type	Migration paths	Cost benefits
<b>Non-critical or Tier 3 monolithic applications and commercial off-the-self applications</b>	Re-host or lift-shift	<ul style="list-style-type: none"> <li>• Infrastructure and maintenance costs saving</li> <li>• Potential savings of 30%</li> </ul>
<b>Third-party services and licenses</b>	Refactor or optimize	<ul style="list-style-type: none"> <li>• Infrastructure, maintenance and software license costs</li> <li>• Potential savings of 45%</li> </ul>
<b>Business-critical or Tier 1, custom-built, monolithic, frequently changing applications</b>	Re-architect	<ul style="list-style-type: none"> <li>• Infrastructure, maintenance and software licenses, productivity and agility improvement costs savings</li> <li>• Potential savings of 53%</li> </ul>
<b>Modular, heterogeneous, frequently changing applications</b>	Containerize and re-host or lift-shift	<ul style="list-style-type: none"> <li>• Infrastructure and maintenance costs saving</li> <li>• Potential savings of 30%</li> </ul>
<b>Applications with a lot of third-party libraries, products, services</b>	Re-host or lift-shift	<ul style="list-style-type: none"> <li>• Infrastructure and maintenance costs saving</li> <li>• Potential savings of 30%</li> </ul>

**Figure 1:** Migration path for each application type for better cost savings

It is extremely important to identify the right workloads that provide predictable return on investment in the initial iterations so that success can be demonstrated within the organization at an earlier stage. Specific workloads like seasonal applications, batch applications and applications with a growing user base provide definite cost benefits — including them in the initial list ensures a

good start to a successful journey. Choosing the right migration path is also based on additional cost levers that include architecting applications to leverage the right infrastructure instance type and building new features leveraging cloud-native platform, such as Pivotal Cloud Foundry, adopting continuous delivery and DevOps for faster delivery of business capabilities.

# Choosing the right cost model

Large organizations that operate across various lines of business will have challenges in building the cost model in terms of choosing the right migration path due to the vast number of applications and business processes. Creating a cost model for all applications may take several months and slow down cloud transformation programs. NTT DATA has defined models that help organizations jump-start cost analysis, including:

- **The 70–30% principle:** Typically, organizations will have 70% non-critical applications and 30% business-critical applications. By re-hosting 70% of non-critical applications in the cloud with minimal changes to application code and infrastructure configuration, organizations will see definite cost benefits. By refactoring or re-architecting the other 30%, business-critical applications, in the cloud, they'll see not only cost benefits, but also IT labor productivity and business agility benefits.
- **The 80–20% principle:** In this principle, organizations list all the business-critical, high-cost impact applications in descending order. By refactoring or re-architecting the top 20% of the high-cost impact applications, they will see not only cost savings from infrastructure, maintenance and software licenses, but also the benefits from IT labor productivity and business agility improvements.
- **Dev-test environments:** Migrate application development and test environments to the cloud for a quick return on investment.
- **Predictable and seasonal applications:** Include specific workloads like seasonal applications, batch applications and applications with a growing user base in the initial list for quick results.

## Summary

While cloud service providers, such as Amazon Web Services and Microsoft Azure, offers tools for building a cost model addressing infrastructure, software licenses and IT labor costs, it is imperative for organizations to take a holistic approach to their cost model by choosing the right migration path for each application type for increased cost benefits.

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