Quick Answer: How Much of My Application Portfolio Can I Lift and Shift to the Cloud?

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Application leaders embarking on a cloud migration often hope they can lift and shift current applications easily. Analysis of many portfolios by Gartner Consulting shows only a small percentage are actually rehosted — most require more substantial work, or should be replaced.

Quick Answer

How much of my application portfolio can I lift and shift to the cloud?

- Measurable business impact will be derived by evaluating whether current applications should be migrated to the cloud, or whether they should be replaced entirely with a cloud-native offering due to architectural or functional shortcomings.

- Application portfolios analyzed by Gartner Consulting showed that functional issues with existing applications drove decisions to rebuild or replace 60% of them, rather than migrating the existing code or package to the cloud. Only 15% were in good enough architectural and functional shape to be directly rehosted, while a further 22% needed to be revised to run on cloud platforms.

More Detail

Evaluate Measurable Business Impact of Migrating Current Applications

Application leaders tasked with a cloud migration often assume they will be able to easily lift and shift (“rehost”) applications to infrastructure as a service (IaaS), and that this can be done quickly. They find, however, that most applications are not even worth migrating to the cloud because it will be technically difficult to exploit cloud-native characteristics and the applications are not meeting the changing needs of the business. In short, it is often more appropriate to replace an application with a software as a service (SaaS) application or rebuild it on a cloud-native platform as a service (PaaS).
Just because an application can be moved to the cloud doesn't mean it should be. To determine an application's disposition, you need to carefully evaluate the technical and architectural criteria that may impede a migration (see Decision Point for Choosing a Cloud Migration Strategy for Applications). But first you should determine whether the application is doing a good enough job for your business stakeholders, or whether it should just be replaced or rebuilt.

**Functional Issues Drove Decisions to Rebuild or Replace 60% of Applications**

Gartner Consulting evaluated cloud migration options in some of its application portfolio management engagements. Figure 1 shows how many applications ended up in each of the “5-R” dispositions of rehost, revise, rearchitect, rebuild and replace. The results are averages over many portfolios and your own results may vary.

**Figure 1: “5-R” Dispositions of Portfolios Analyzed**

The data shows:

- Only 15% of applications considered were selected to be rehosted to the cloud — a “lift and shift” approach. Applications here met the technology criteria and did not have major architectural or functional constraints. Essentially, business stakeholders were happy to have the same old capability running outside the data center.
22% required some level of revision to run in the cloud environment. These applications exhibited some technology or architectural issues, but few functional issues. Revising them must also generate enough benefit to justify the cost.

Only 3% of applications fell into the rearchitect category, meaning much of the code could be reused, but their structure had to be changed to run well in the cloud and they did not have functional issues. This is so rare, because it may often be easier to rebuild than try to save much of the existing code if the architecture must change.

Functionality and architectural issues pushed 20% of applications into the rebuild bucket, where the original functionality was enhanced and rebuilt in more modern tools and architectures.

The largest group (40%) had functional issues that could not be remediated by the other “R” modernization options, so replacing each with a new custom-built application, or implementing a SaaS application, would be recommended.

Additional research contribution: Eric Klintberg of Gartner Consulting contributed portfolio statistics and analysis to this research.

Recommended by the Authors

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Decision Point for Choosing a Cloud Migration Strategy for Applications

Using TIME for Application and Product Portfolio Triage: Data From the Field

How to Assess the Fitness of Your Application Portfolio

Toolkit: Application Portfolio Business and Technical Fitness Assessment

Evidence

The data set is derived from 143 application portfolio management engagements conducted by Gartner Consulting from 2007 to 2021 across multiple industries, including banking, energy and utilities, education, healthcare, technology, insurance, manufacturing, pharmaceutical, public sector, and retail.