

Oracle@Oracle Industry Cloud

Infrastructure Story

4.1 / Cloud Migration Program Management

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INTRODUCTION

Cloud enhances resilience, scale, and scope of infrastructure services. A successful transformation requires enterprises to re-examine and adapt their technology, organizational structure, and business practices, impacting everything from long-term product roadmaps to planned technology investments. This series explores Oracle's experiences consolidating its Global Business Units (GBUs), a set of eight industry-focused software groups that serve over 199,000 customers with 60+ products running in 80 colocation data centers, onto Oracle Gen 2 Cloud. This paper kicks off our discussion of the execution of cloud transformation by exploring the key challenges and frameworks required to manage the migration program.

Migration is the last phase required before the organization can cut off its legacy environments and beginning to realize the value of its cloud investments at scale. As such, organizations will invariably want to do whatever they can to accelerate cloud migration as much as possible.

The realities of migration inevitably confound these plans migration. Other than preparing customers, little work can be done until the organization has a version of the application available on the cloud. Actually moving workloads can take a number of paths, ranging from copying images of existing virtual machines (VMs) to installing a new instance and replicating the data; but all require some level of technical investment or labor commitment to complete. The state of the existing environment also adds to the complexity. Where, for example, migration requires one or multiple version updates or unique components or customizations. Multiplied across each product environment in the organization's fleet, the amount and varying types of labor involved in migration easily becomes overwhelming. At the same time, the resources available to complete it are finite, and often also responsible for managing day-to-day operations.

Comparing what needs to be completed to available migration throughput will quickly leave organizations contemplating a prolonged, even multi-year undertaking, despite their best intentions. This leaves organizations with two critical questions:

- How can we prioritize migration work based on milestones that tie to business outcomes?
- How will we track and manage progress to move toward these milestones as quickly and efficiently as possible?

PRIORITIZING MIGRATION ACTIVITY

Cloud migration is not a single event. Rather, it represents the sum of a number of discrete migration projects, typically focused on a single environment. A number of methods can be used to organize and sequence the order in which these projects will be completed. Three core factors weighed include:

- **Customer Preference:** organizes based on the individual customer's timelines and preferences
- **Migration Readiness:** organizes based on the amount of work required to prepare each environment for migration, prioritizing low-effort migrations upfront
- **Business Impact:** organizes based on tangible business outcomes that can be achieved over the migration period

Prioritizing solely by one of these factors invites concessions for the others. For example, enabling customers' total control over migration timing will result in a plan that makes poor use of internal resources and can delay progress toward migration objectives. Focus on migration readiness can enable the organization to show strong migration progress initially, but creates a long tail of complex projects that does not consider customer demand or the overall business value. Prioritizing by business impact provides the best path to incremental returns on the cloud investment, but potentially requires concessions to customer preferences or resource utilization.

Successfully planning for cloud migration requires that organizations find an optimal balance of these factors, based on the context and realities of their business.

MEASURING PROGRESS

Once migration is underway, the organization must manage its progress against the targets set in its prioritization process. At the individual project level, this requires the management of multiple activities and work streams that may vary between products and even between multiple instances of the same product. Given the scope and complexity that cloud migration entails, a centralized layer of program management is required. This requires the creation of a framework that condenses the variety of project activities within a core set of key performance indicators (KPIs).

At this level, detail regarding individual projects falls out, and the focus shifts to aggregating data to provide insight into migration trends and areas that require corrective action or investment in acceleration. This view still requires visibility to core project milestones, such as target and actual start and completion dates or the total cycle time per project. However, the aggregation of this data across all projects is what permits the organization to understand how the organization is progressing against milestones as well as enabling it to understand and effectively manage program velocity and resource utilization (Table 1).

Table 1: Migration Program KPIs

SAMPLE KPIS	
Migration Timelines	<ul style="list-style-type: none"> • Number of migration projects forecast to be completed by target date • Number of migration project actually completed by target date • Delta between forecast and actual by target date • Average amount of time slippage between forecast and actual completion
Migration Velocity	<ul style="list-style-type: none"> • Total number of projects that can be supported by resources per cycle • Number of projects forecast to be completed per cycle • Number of projects actually completed per cycle • Delta between total resource capacity and forecast number • Delta between total resource capacity and actual number • Delta between forecast number and actual number

This program view enables the organization to understand what it is accomplishing in terms of pure units of effort. However, it does little to provide insight into whether the migration is making progress against intended business outcomes. In some cases, the pure program view will be sufficient. Others requires an additional layer of KPIs to track progress against the migration. These KPIs will vary, although they should align to the organization's key prioritization factors.

ORACLE GBU STORY: DESIGNING A MIGRATION PROGRAM

Focus on Cross-Business Program Management

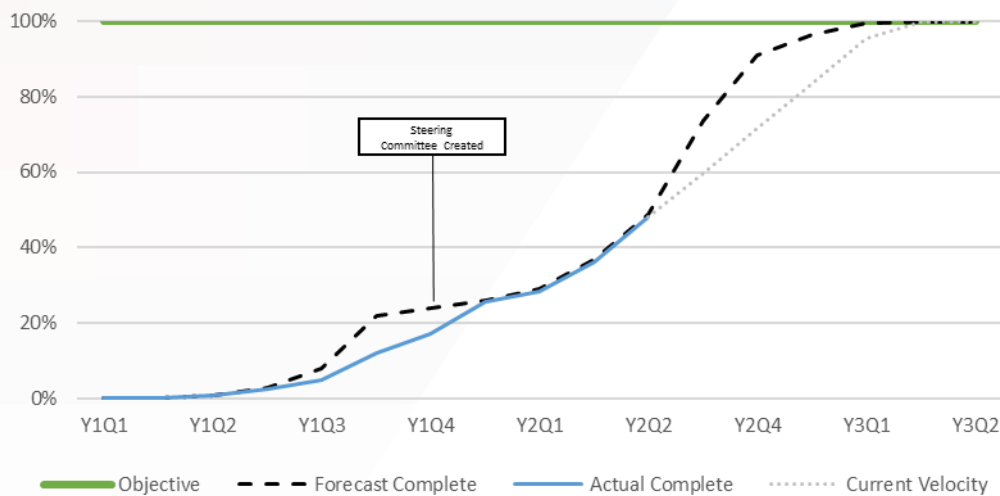
Oracle's Global Business Unit (GBU) industry portfolio includes over 60 applications, supporting core enterprise functions across eight industry verticals and over 199,000 customers across the globe. To complete the migration of all workloads supporting this install base to Oracle IaaS, the GBUs undertook over 3,000 individual migration projects. Due to varying requirements of the diverse industry customer base and over 40 years of product evolution aggregated over more than 30 acquisitions, the complexity of these projects varied widely.

In the early stages of cloud transition, when a small subset of products were available on the cloud, individual product teams drove migration activities, largely based on the needs of application teams or customer appetite. As more products made the transition to the cloud, the increasing volume of migration projects requiring involvement of central services teams rendered this approach untenable. Without common prioritization or coordination frameworks to drive migration projects, the GBU found that they were not organizing effectively to drive target business outcomes. Without alignment to key targets, the GBUs struggled to find ways to synchronize efforts, which resulted in an inconsistent volume of migration activity.

This burdened the teams responsible for completing migration work with alternating periods of high resource contention and periods of wasted resource availability. The GBUs found that both this wasted throughput and resource bottlenecks combined to stall migration progress.

In order to more effectively organize and coordinate migration projects, the GBUs created a central program management team responsible for tracking activities across all portfolio teams. Each product team retained responsibility for driving the execution of its own migrations. The central program management team organized central reporting and data collection, including information about program status, key target and actual milestone dates, and various other factors pertaining to migration complexity or risk for each project. Figure 1 provides an example of a key program report created by this team, providing a representative illustration of GBU migration trends.

Figure 1: Example of GBU Migration Program Dashboard



Migration Prioritization

The GBU migration steering committee began by establishing a framework for organizing migration projects around common business objectives. Because individual product teams drove the level of pre-migration investment, GBU cloud transformation goals varied across the portfolio (see [Oracle@Oracle Industry Cloud Infrastructure Story 1.2 Paths to Value in the Cloud](#)). However, all transformation projects shared common goals of exiting and closing legacy data centers, which provided tangible cost reduction opportunities. Application- or customer-led approaches to migration planning ensured that migrations moved forward, but did not necessarily drive meaningful progress toward the common goal of closing data centers.

In response, the GBU migration steering committee placed mechanisms in place to align migration projects to data center closure targets. This approach started by inventorying the existing GBU data centers and prioritizing closure, based on an analysis of the following factors:

- Expense Contribution
- Technical and Operational Risks
- Timing of Contract Renewals or Hardware Refresh
- The Number Product Environments to be Moved

The GBUs set target closure dates for each location based on the combined analysis of these factors. In turn, these targets became the key mechanism for organizing the migrations out of each set of data centers into key tranches of activity. Each tranche set a closed window for the completion of the migrations needed to meet closure targets. In this way, the GBUs organized these projects in a way that could drive tangible business impact over the course of cloud migration (Table 2). At the same time, and described in [Oracle@Oracle Industry Cloud Infrastructure Story 3.4 Obtaining Customer Alignment](#), this model still permitted GBU product teams the flexibility to manage customer preferences and other migration factors, but focused within the bounds of any given tranche.

Table 2: Example of GBU Migration Tranche Definition

TRANCHE	START DATE	END DATE	NUMBER OF DATA CENTERS	NUMBER OF ENVIRONMENTS	EST. EXPENSE IMPACT
Tranche A	Q1 2021	Q3 2021	5	450	\$10m
Tranche B	Q4 2021	Q2 2022	8	600	\$11m
Tranche C	Q2 2022	Q3 2022	3	150	\$7m

Measuring & Managing for Success

Transitioning to the Tranche-based model described above also requires a shift in migration forecasting performance measurement models. The pure program management KPIs originally implemented by the GBUs primarily measured performance in terms of whether targets were met and the percentage of product environments that would be migrated by a given date. To improve insight into progress to business outcomes, the GBUs overlaid data about data center closure targets. This includes visibility into how environments burned down by location, tracking to data center closure targets, and quantified reduction in expenses. In addition to providing tangible indicators of success, tracking the data center context also provided a feedback loop that could be used to inform decisions related to migration program management.

CONCLUSION: KEY OBSERVATIONS AND TAKEAWAYS

The Oracle GBUs' initial experiences managing migrations across its product teams illustrate the challenges that can result from a decentralized approach to migration. While initial investments in central program management improved visibility and planning, they did not help the GBUs to make meaningful progress towards the business outcomes driving its cloud transformation.

Only when the GBUs added an executive steering committee, with governance responsibility over the overall migration program, did they start to drive consistent migration progress towards incremental goals. Anchoring the sequence of migration projects to a tangible goal, the closure of data centers, became a critical component of this evolution. In addition to providing a mechanism for aspirational priorities for migration work, data center closure provided a second element of ongoing program management, providing business context to more traditional program management reporting as well as an ongoing feedback loop used to maintain discipline and focus throughout the management of over 3,000 migration projects.

This illustrates a key principle discussed in [Oracle@Oracle Cloud Infrastructure Story 3.2 Aligning Financial Objectives](#): the use of multiple cycles of investment and return to segment the large, multi-year investment of cloud transformation. Of course, data center closure is only an example of the optimal, central organizing principle identified by the GBUs. By reviewing their own key drivers, organizations can isolate the outcomes with the greatest, common impact for their businesses.

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