

Oracle@Oracle Industry Cloud

Infrastructure Story

Executive Overview

WHITE PAPER / FEBRUARY 25, 2020

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INTRODUCTION

For enterprises who run their own data centers and hosted environments, moving to the cloud is a major shift. Cloud offers enhanced resilience, scale, and scope of infrastructure services. However, completing this journey requires enterprises to re-examine and adapt technology, organizational structure, and business practices. This impacts everything from long-term product roadmaps to planned technology investments. Enterprises making the transition must face unique challenges, answer foundational questions, and seize far-reaching opportunities.

The Oracle@Oracle Industry Cloud Infrastructure Story reviews the experiences across Oracle's industry Global Business Unit (GBU) groups as we migrate the entire portfolio to Oracle Cloud Infrastructure (OCI), reviewing the opportunities and challenges of our cloud transformation. We will share our wins, our lessons learned, and the challenges we discovered across this process.

ORACLE GLOBAL BUSINESS UNIT (GBU) APPLICATIONS

At its core, Oracle is an enterprise software company. We provide a suite of products addressing the core challenges of mission critical systems for organizations of all sizes in every corner of the globe, from the largest enterprises and governments to small and medium businesses, and software development community. Our products span every layer of the IT stack, from hardware such as Exadata engineered systems; to platforms like database, MySQL, and Java; to purpose-built applications like Enterprise Resource Planning (ERP) and human resources 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. This portfolio grew through internal product development project, as well as multiple acquisitions. Each GBU leverages central delivery services and resources, while directing development and market strategy within its vertical. The result is a diverse array of product architectures, customer delivery models, and platform components. Some services were built from the ground-up as modern SaaS offerings, while many others evolved over time from on-premises applications that were deployed using hosted or "managed services" models.

As might be expected from this diverse portfolio, each product architecture includes many different infrastructure components, technology, and delivery teams. To manage the delivery of these services, Oracle GBU cloud operations maintained an array of legacy physical servers in 80 colocation data centers. Oracle standard hardware and platform technology supports much of this portfolio, while some acquired applications leveraged third-party IaaS and PaaS services.

INDUSTRY LEADING SAAS ON ORACLE CLOUD INFRASTRUCTURE

The Oracle GBU cloud transformation began as part of a comprehensive Oracle strategy to simplify our technical infrastructure, allowing us to focus on adding value for the customer by modernizing, improving, and extending our applications. At the root of this change was the migration to an integrated enterprise architecture in Oracle Cloud Infrastructure (OCI), a next generation Infrastructure-as-a-Service platform. OCI compounded the value of re-platforming acquired tools and infrastructure to the latest and most powerful infrastructure by enhancing cooperation and collaboration within the Oracle team. For the Oracle GBU business, in particular, this would permit enhanced focus on industry customers and value-added application development and delivery priorities.

As a part of this transition, every application and customer environment within the GBU portfolio would migrate to OCI. Four key factors drove this transformation:

- **Scale and Speed:** Maximize our ability to efficiently and rapidly deploy products, infrastructure resources and Oracle services across the GBU business
- **Modernization:** Improve on technical capabilities and service architecture through infrastructure upgrades; modern tools such as automation for deployment pipelines, resource management and orchestration; integrating new technologies and capabilities, like artificial intelligence and machine learning that can provide insight and efficiency based on behavior of the cloud service
- **Standardization:** Adopt common infrastructure, shared services, and operational discipline and practices to increase the efficiency of our operations, allowing us to deliver greater value to our customers
- **Revenue Optimization:** Minimize the overhead associated with delivering services by increasing automation, multi-tenant architectures, and scale

MOVING A DIVERSE, DYNAMIC PORTFOLIO TO NEXT-GENERATION CLOUD

The GBU cloud transformation presented opportunities in two primary areas. The first results from the replacement of disparate, lower-stack infrastructure components across our legacy environments with standardized IaaS services. The second results from leveraging higher-level cloud service characteristics, such as elastic scaling and autonomous service management. However, for this initiative to succeed, we had to move our complete suite of applications to OCI without impacting customer experience or the bottom line. Given the size, complexity, and diversity of Oracle's application portfolio, this represented a significant challenge.

Early on, we decided success depended on moving the full suite of applications as quickly as possible, allowing Oracle and our customers to begin realizing the benefits of our transformation sooner rather than later. As a core principle in support of this, we sought to minimize the changes to our product and operating environment changes.

The entire process required extensive planning and preparation. First, we sought to understand the scope of our cloud migration project, which included a complete and comprehensive inventory of our products, services, and supporting assets. Second, we selected pilot projects that would deliver the greatest insight for the larger organization. Critically, these pilots created reference models for areas including design patterns, standards, and shared services consumption, creating a roadmap for the teams who would follow. As part of this process, we also defined business objectives and project scope for each product's initial transition.

Throughout, our teams faced many decisions around allocating scarce resources, balancing the immediate needs of rapid migration against the full range of opportunities presented by cloud-native modernization. We continue meeting this challenge head on, even as we continue to transform our applications and work models to cultivate agility and support new delivery models. While less dramatic, the lower-stack benefits were nonetheless more immediately accessible, minimizing non-strategic spend on physical infrastructure and data center expenses, while requiring less intensive changes to the services. Planning the transformation thus became a question of determining how to distribute the labor required by these investments (before or after the migration event) for each engineering and migration projects required to complete the transition across the GBU portfolio.

Prioritizing the lower-stack investments permitted us to show immediate, tangible value from our cloud transformation, while defining a pathway to true cloud characteristics provided a runway for continuing value over the longer term. Accelerating the migration to OCI IaaS thus became the primary goal across the program, focusing immediate investments and labor primarily on what was needed to make the transition out of infrastructure management business.

ENGINEERING THROUGH CHALLENGES, LEVERAGING SHARED RESOURCES

Throughout this process, we committed to engineer our way through problems, instead of "brute forcing" our way through added people or process. We adopted OCI IaaS and PaaS services across our portfolio, collaborating on development of feature parity or improvements on legacy technologies that would also be commercially available in our OCI cloud offering. Where it added value, we retained existing technology, deployed through standard operating models.

To negotiate these dynamics, we encouraged individual product team autonomy in engineering and migration program management, facilitating cross-team information sharing, developing shared services to solve common problems, and centralizing program management and reporting resources. The GBU portfolio is highly diverse, with each service occupying a different position in its product lifecycle and differing technical characteristics, operational processes, and customer expectations. Determining the scope of investment to be made prior to migration requires an individualized balancing of these characteristics.

WHAT WE LEARNED

As complex as some of the technical requirements were, it quickly became clear that this transformation amounted to a fundamental shift in our product and our business. Many teams needed to become more service-focused, more agile, and more in tune with operational and business requirements. For many teams, this is an ongoing transformation, occurring alongside delivery against our technical roadmap. We will explore that ongoing reality through future content in this series.

Many of the challenges our teams confronted and worked through, and the solutions we ultimately took, represent the same challenges that organizations confront when considering a transition from on-premises IT infrastructure to a cloud model. This content series distills our experiences across all stages of this transition to provide insights and observations.

We will look closely at how our teams continue to execute on defined objectives, as well as the program and project approaches they take to achieve this. We will also speak to the unexpected requirements, obstacles and findings we encountered; how we are dealing with them in the context of the in-flight project work; and how we leveraged what we learned, and continue to re-apply to our work, from these experiences in other areas.

The Oracle@Oracle Industry Cloud Infrastructure Story will include five sets of white papers, each series focusing on a critical aspect of the transition, including:

- **Series 1 – Introduction & the Road Ahead:** Describes the business drivers, benefits, and high-level portfolio planning and assessment
- **Series 2 – Technical Planning:** Describes the preparation for changes to our systems, including inventory assessment, pilot identification, and initial migration plans
- **Series 3 – Business Planning:** Reviews the service delivery transition, including customer alignment, organizational changes, and financial objectives
- **Series 4 - Execution:** Surveys the management of migration execution, including how to address unexpected issues, manage the coordination of internal teams, and the maintenance of program plans, roadmaps, and expectations throughout the process
- **Series 5 - Measurement and Results:** Details the measurement of progress and success throughout the program, while maintaining line of sight on business drivers and continuing portfolio evolution

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White Paper Oracle@Oracle Industry Cloud Infrastructure Story: Executive Overview
February 2020

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