Cloud Essentials: Cloud Platform Overview

Redefining What’s Possible with Oracle Cloud Platform
As cloud computing took root in the enterprise several years ago, much of the buzz focused on its potential to reduce IT costs and simplify processes—and, if the dramatic increase in cloud adoption is any indication, it’s safe to say the cloud has delivered on that promise. But with many experts suggesting that cloud adoption is still only in its infancy, a new narrative has begun to emerge about the cloud’s next growth phase—fueled by the power of the cloud to go beyond cost savings and actually provide the building blocks for companies to pioneer groundbreaking innovations and disrupt entire industries.

This new “age of cloud innovation” is happening amid a backdrop of converging forces—a confluence of technical and behavioral trends that has formed at the precise moment that advances in cloud technology are emerging to harness their collective power. Underpinning these market forces is a veritable explosion in data, largely bolstered by the boom in Internet of Things technologies and fueled by increases in computational capacity that make it possible to crunch and interpret that data. And that couldn’t come at a better time, because new generations of digitally engaged consumers and employees are clamoring for more access to more detailed data—both at work and at home.

Thankfully, cloud technology has evolved to help companies not only cope with this data-driven tsunami of market forces, but capitalize on it, as well. While cloud applications spearheaded many a company’s initial move to cloud, it’s actually new developments in the underlying cloud platform—both platform as a service (PaaS) and infrastructure as a service (IaaS)—that are making it possible for companies to move to a new stage of competitiveness and growth, where the tools to build truly innovative products can transform their entire organizations.
That’s because cloud platform technology presents companies with a rare opportunity to take a well-worn IT maxim—one that says companies, on average, commit 80 percent of IT spend to maintenance, but only 20 percent to innovation—and flip it on its ear. How? Consider these three ways in which cloud platform technology is affecting innovation:

The economics of innovation: With pay-as-you-go pricing models, companies have already reaped tremendous benefits from driving down capital expenditures with cloud, freeing up dollars for investments in more innovative products. At the same time, the speed with which cloud platform technologies allow IT teams to simplify processes, such as quickly spinning up development environments, means that organizations can free up human resources to tackle innovation, as well.

The pace of innovation: Cloud technologies have helped buoy continuous development methodologies with the ability to automate the provisioning and management of cloud infrastructure. This not only leads to faster time to market, but it ultimately delivers products that are more differentiated and more attuned to customer demands.

Insight into innovation: As noted earlier, several game-changing data trends have coincided with emerging cloud technologies to exponentially widen their impact. Artificial intelligence (AI) and machine learning, for example, can help organizations deliver rapid insights into data, identifying patterns they couldn’t see before and enabling them to more accurately predict outcomes. With these kinds of insights, companies are now delivering new levels of innovation once considered unimaginable.
Executives are already seeing the fruits of this convergence of data trends and cloud technologies in the rapid progress being made across a wide number of consumer and commercial disciplines—progress that’s literally changing the way businesses run and people live. For example, companies are using analytics to drive “next best offer” programs that accurately gauge what a consumer is likely to purchase. Similar technologies—grounded in understanding the right information at the right time—are also at the root of how companies recruit the best candidate or detect fraud.

For consumers, these technologies have led to applications such as personalized shopping experiences, tailored medical treatment, and precision agriculture, which uses real-time data processing to help farmers gauge what to plant, where, and when for the best possible return.

Cloud Stages

**Migrate**
- Lift and shift
- Application DevTest
- Software as a Service (SaaS)

**Extend**
- Integrate with on-premises / hybrid cloud
- Extend for mobile and social
- Customize apps, build new apps

**Transform**
- Predictive and adaptive insights
- Digital, interactive engagement
- Integrated SaaS suites
What’s Required?

If cloud technologies offer such undeniable opportunity for innovation and growth, why is it that roughly 10 percent (or less) of enterprise workloads currently run in a public cloud, according to experts? For many decision-makers, the answer lies in the delicate balance between pursuing technologies such as cloud that help fuel their future ambitions, while also finding ways to protect important existing IT investments on premises—in other words, finding a bridge that takes maximum advantage of the present without limiting options for the future.

Finding such a bridge isn’t as simple as it sounds, however. Many of the offerings from top cloud providers essentially equate to a cookie cutter approach that forces companies to adapt to the provider’s roadmap for how to move to cloud. The problem stems from the fact that most providers don’t offer a breadth of competitive products across every layer of the cloud stack—SaaS, PaaS, and IaaS. As a result, companies that moved to the cloud by adopting SaaS applications, for example, have come to find they’re now using a hodgepodge of apps from various providers for functions such as HR, finance, marketing, or supply chain management. Without consistent platform management tools, connecting those apps is challenging. In many ways, this scattershot SaaS approach ends up mimicking the very same dilemma that cloud was meant to solve in the first place. In addition, cloud infrastructure providers lack the database and other platform tools, as well as the SaaS expertise, to provide customers with the ability to connect to on-premises apps, forcing companies to rewrite existing applications for cloud.

1 451 Research, “Enterprise IT Executives Expect 60% of Workloads will Run in the Cloud by 2018,” 451research.com/blog/764-enterprise-it-executives-expect-60-of-workloads-will-run-in-the-cloud-by-2018

2 Ibid.
Ideally, customers seek the ability to build a path to cloud that makes sense from their own unique standpoint, but to do so requires a provider with deep expertise and a complete set of services across SaaS, PaaS, and IaaS. Currently, only one provider—Oracle—can legitimately lay claim to deep roots in all three. More importantly, beyond just having expertise, Oracle has managed to integrate those layers to create a cloud platform that can be shaped and scaled in personalized ways that leverage historical investments without limiting future possibilities. The benefits of that integration give rise to a host of differentiating points:

**Complete:** Simply put, complete solutions reduce complexity. As a dominant SaaS provider, Oracle’s products run the gamut from enterprise resource planning (ERP) to supply chain management (SCM), customer experience (CX), enterprise performance management (EPM), and more. Oracle’s PaaS portfolio is equally—if even not more—dominant, anchored by the world’s leading database and most popular programming language (Java). And Oracle’s recently unveiled, next-generation IaaS offering far outperformed competitive products in speed and cost, according to the latest benchmarks.³ Arguably, Oracle technology’s most compelling and powerful advantage is that it not only provides unparalleled integration between SaaS, PaaS, and IaaS, but also integrates with on-premises platform technologies (database, Java, middleware) to create a seamless customer experience that drives operational efficiencies and delivers even faster innovation.

**Open:** An important ramification of cloud innovation is that the one inevitable constant in today’s modern IT architectures is change. Critical to Oracle’s approach to the cloud is giving companies the optimum level of flexibility as their environments change over time, meaning they can use existing skill sets and talent across all environments and technology stacks. With Oracle Cloud, companies can run both Oracle and non-Oracle workloads, and connect non-Oracle applications with Oracle solutions. This results in greater options for where and how to make the journey to the cloud to generate more value from their current state. It also enables the adoption of cloud technology standards such as Docker or the ability to support VMware, and provides support for microservices and polyglot languages.

Secure: Oracle’s approach to cloud is twofold: embed security deep within each layer of the cloud (and as far down as the chip layer), while also providing separate cloud security services that customers can tie into their cloud applications. To secure its public cloud, Oracle built a data-centric strategy that includes privileged user controls to prevent super-users from having too much access to database information. It also prevents Oracle cloud administrators from seeing the data in customers’ databases. Oracle’s security cloud services allow customers to get visibility and control of unsanctioned apps; protect against sophisticated cyberattacks with unified insight and machine learning; build identity-driven security operations to prevent, detect, and defend; and provide user access controls, encryption, and masking.

Choice: Perhaps the most visible benefit of Oracle’s integrated cloud stack is the way it gives companies options they’ve never had. Oracle focused the engineering of its products and services to best connect private cloud, public cloud, and hybrid cloud to enable flexibility, ease, agility, compatibility, extensibility, and seamlessness. With Oracle, customers can deploy and manage their apps on their own private cloud, or they can move them to the public cloud. When they move, it’s a seamless migration because Oracle uses similar technologies (same standards, same products, and unified management) on both sides. One of Oracle’s pioneering cloud platform products—Oracle Cloud at Customer—actually makes it possible for companies to bring the power of the Oracle public cloud behind their own firewalls.

Intelligent: Because Oracle, with its pioneering database technology, was literally built on the premise that data—and how it’s managed—is the lifeblood of successful organizations, it should come as no surprise that Oracle has its own unique perspective on building enterprise intelligence. For Oracle, artificial intelligence and machine learning aren’t standalone applications built for data scientists to apply in complex scenarios. Instead, Oracle makes intelligence available through its entire platform to any developer or end user. For example, Oracle Adaptive Intelligence Apps actually learn from user behavior, then react, adapt, and optimize in real time.
Supporting the Journey from Any Starting Point

With deep roots in each layer of the cloud stack, Oracle makes it possible to choose how you want to map your own cloud journey, with multiple paths and roadways you can draw, then shape, then redraw again in new, more powerful ways as your business grows. It’s a way to envision a cloud future that’s less about restrictions and more about reimagining people, processes, and progress.

For example, with Oracle, that journey could begin by modernizing with SaaS, then integrating those SaaS apps with on-premises apps, using Oracle PaaS and integration tools. Next, you can extend the capabilities of those applications with social, mobile, or process automation capabilities—or you might add artificial intelligence.

The journey to cloud could also begin with PaaS, using Oracle’s application development platform. With Oracle PaaS, you can develop and test in the cloud then deploy in the cloud or on premises. Next, you might integrate data and analytics to drive greater insights, and even further differentiate with technologies such as chatbots or virtual assistants.

Starting with IaaS, you can begin by moving workloads to cloud, then integrating those applications with on-premises apps and extending their capabilities. Next, you could add SaaS modules to continue to add features. With all your applications running in the cloud, you can take advantage of that aggregated information to build data lakes and drive predictive analytics.

The first step of your journey could start on premises by consolidating systems, then adding cloud services for back up and archive. If you’re not able to move to cloud, perhaps for regulatory reasons, you could use Oracle’s Cloud at Customer to get the benefits of the cloud, but deployed behind your firewall.
Oracle Cloud Platform in Action

Discussions about “potential” and “innovation” can certainly be exciting, but when it’s all said and done, the journey to cloud is ultimately about enabling real business value. The following are seven ways in which Oracle Cloud Platform helps deliver on that value:

Move Workloads

Oracle Cloud Platform provides the choice and freedom to sequence workload migrations however you’d like—from SaaS, PaaS, or IaaS. You can lift and shift apps, databases, and VMs to IaaS without the cost and complexity of manual migrations and rewrites. Or you can lift and shift workloads directly to PaaS, allowing you not only to retire infrastructure and reduce cost (some customers claim up to 60 percent reduction in TCO), but also get the benefits of automation so that you can focus on outcomes versus administration. In addition, customers can also improve overall application performance and leverage analytics in the cloud.

Oracle’s complete cloud stack provides several important advantages for migrating, allowing you to extend apps with SaaS and PaaS once they’ve moved to cloud. Migration tools for Oracle workloads can help move entire app environments—including lift and shift tools to help move Oracle’s applications and databases to Oracle Cloud. In addition, Oracle Ravello has a unique ability to migrate VM/KVM from on premises to the public cloud without needing any application or networking changes. In contrast, Amazon Web Services (AWS) requires application changes and manual migration steps.

Develop and Deploy

Oracle’s integrated, standards-based solutions for developing and deploying apps are technology agnostic, providing more choice for development environments. Built with DevOps in mind, Oracle includes automation tools for continuous deployment, with integrated security and management tools for monitoring, compliance, and governance. Oracle also makes it possible to build modern cloud-native apps, including microservices, APIs, mobile, and chatbots.

Oracle supports all major open source tools and technologies, as well as modern programming languages, such as PHP, Python, Ruby, Node.js, and more. With Oracle, you can deploy apps on containers that are fully managed or bring your own and manage them yourself. With advanced AI and analytics, you can predict and identify faults with newly deployed apps. Oracle also enables innovative technologies such as chatbots, mobile, and APIs, as well as intelligent app monitoring via machine learning. And finally, from a deployment perspective, Oracle offers a choice of where applications run, either in the cloud, on premises, or on Oracle Cloud at Customer.
Modernize Data Management

Oracle’s integrated, comprehensive cloud platform manages any data (structured or unstructured) and supports any application with the ability to scale—from new custom apps to data warehousing to real-time analytics. It allows you to consolidate your database footprint to reduce costs, while also offering automated tooling for upgrading, patching, and provisioning that can improve productivity.

Oracle’s 100 percent compatibility means you avoid the high cost of recoding applications as you move them to the cloud. In addition, Oracle is the only provider that allows for true workload portability across all environments, with the ability to deploy workloads in a hybrid manner across cloud, on premises, or even on Oracle Cloud at Customer. Recent benchmarks show Oracle with substantially faster OLTP performance than Amazon Aurora to power business workloads. For analytics, Oracle’s speed advantage over Amazon Redshift is even more dramatic.\(^4\) Oracle has pioneered data management, with advances in in-memory, clustering, and multitenancy that allow you to easily start with DevTest and scale up and out with deployment of mission-critical workloads—all on the same cloud.

Connect and Extend

Critical to supporting the journey to the cloud is providing a platform that allows customers to connect apps, data, APIs, and content across clouds and on premises. Oracle automates and orchestrates business processes across systems and applications, with the ability to extend capabilities, differentiate, and create modern experiences—for customers or employees.

Oracle’s catalog of hundreds of prepackaged integration adaptors helps simplify connections to Oracle and third-party apps—versus having to build these yourself or buy connectors from multiple vendors and trying to make them work together. Oracle’s integrated cloud solution also enables you to connect content with workflows and approvals to drive collaboration with business processes across on-premises systems and the cloud. And finally, Oracle empowers business users with visual capabilities to connect systems, map processes, and build web apps, mobile apps, and interactive apps.

\(^4\) Ibid.
Insights for Business Transformation

Oracle Analytics Cloud allows customers to visualize business performance by asking any question of any dataset, going beyond dashboards to see hidden signals and explore unanswered questions. Powerful predictive and modeling tools anticipate outcomes, asking what-if questions and quickly building and evaluating a range of possible scenarios. Oracle allows you to build enterprise data lakes to drive innovation and democratize data access. You can also leverage traditional and new data types to discover operational efficiencies and innovation.

Oracle’s unique advantage is that it combines the full range of analytic capabilities into a single solution, ingesting data from a variety of sources, preparing it, visualizing it, and analyzing it—across all data types. Oracle Analytics Cloud predicts outcomes with adaptive intelligence via machine learning. For example, you can identify patterns to improve customer interactions. Finally, Oracle provides greater flexibility at lower cost because you can access all data wherever it lives—whether that’s data warehouses, data lakes, or third-party data—without moving it.

Modernize Security and Compliance

In the area of security, Oracle leverages its leading technology, people, and processes to give you a comprehensive security posture across rapidly changing hybrid environments. Oracle protects against the most advanced cyberattacks using the latest detection, prevention, prediction, and response capabilities, and helps ensure that you continuously meet the most stringent regulatory compliance. In the event of a data breach, Oracle allows you to respond quickly to minimize any negative impact to your brand and avoid large data remediation costs.

Oracle Identity Cloud Service offers single sign-on across all apps (whether on premises or in the cloud) and a cloud access security broker (CASB) for visibility into all cloud apps. It also includes security monitoring and analytics for a single pane of glass—providing continuous compliance, API security controls, and data security for hybrid cloud. To protect against the most sophisticated attacks, Oracle uses machine learning to fuse threat intelligence, identity context, and behavioral analytics. Oracle is unique in its approach to holistic data security and app visibility across heterogeneous environments, whether data is on premises or in any cloud (Oracle or third party).
Modernize Systems Management

Oracle Management Cloud is a suite of next-generation, integrated monitoring, management, and analytics cloud services built on a scalable big data platform that provides real-time analysis and deep technical and business insights. With Oracle Management Cloud, customers can eliminate multiple information silos, resolve application issues faster, and run IT as a business. The unified monitoring platform provides customers with actionable insights across IT operations, as well as out-of-the-box security that doesn’t require costly on-premises investments. It also automatically detects anomalies early and prevents outages. And Oracle’s systems management solutions automatically monitor any heterogeneous environment in the cloud or on premises.

Oracle Management Cloud ensures service-level agreements (SLAs) by automatically collecting, aggregating, and analyzing data across cloud and on premises—Oracle, non-Oracle and open source. This enables improved visibility to track SLAs and ensures optimal performance and availability, as well as security and compliance. Oracle Management Cloud also prevents outages with built-in machine learning that analyzes vast amounts of data to detect issues before they arise. It also reduces risk by providing adaptive monitoring that tracks any changes in application environments.
The Organization

Founded in 1957, Dallas-based Club Corps owns or operates more than 200 golf and country clubs, business clubs, sports clubs, and alumni clubs in 27 states, the District of Columbia, and two foreign countries.

The Challenge

In order to improve the member experience, ClubCorp needed to modernize IT systems, investing in innovation rather than administration. Newly acquired clubs and members needed to be onboarded seamlessly in order to optimize profitability. Adding urgency to the situation, ClubCorp’s production data center lease was up at the end of 2016, meaning it had to move its entire IT footprint—including custom applications—to a public cloud in 120 days.

The Strategy

To start, ClubCorp lifted and shifted its on-premises instance of Oracle E-Business Suite to Oracle Cloud. Next, the company extended its legacy ERP and HCM apps using Oracle Integration Cloud, Java, and Oracle Database Cloud Service. Next, ClubCorp added some new SaaS modules for ERP, EPM, HCM, and point of sale to transform the member experience. The company also improved decision making with real-time data access. Finally, it integrated these new modules with non-Oracle apps.

The Success

As the end result, ClubCorp built a cohesive, secure platform that enabled it to seamlessly onboard new clubs, members, and employees. The company is a great example of flipping the status quo by investing in innovation versus maintenance, resulting in a TCO savings of 60 percent. And, as hoped, ClubCorp was able to retire its data center.
Oracle Cloud Essentials

Oracle Cloud Platform

Learn more about Oracle Cloud, or visit cloud.oracle.com/tryit to try Oracle Cloud today.

DISCLAIMER: The previous is intended to outline Oracle’s general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle. Not all technologies identified are available for all cloud services.

Copyright © 2017, Oracle and/or its affiliates. All rights reserved. Oracle and Java are registered trademarks of Oracle and/or its affiliates. Other names may be trademarks of their respective owners.

VODLS514 170918