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The Cloud-Native ERP of the Future

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Introduction

Digital platforms enable enterprises to rapidly respond to market changes. A cloud-native platform can scale fast to provide business agility and flexibility by enabling the components to be replaced or rearranged to reconfigure business processes dynamically. However, many enterprises are locked into monolithic ERP systems with legacy technical debt. These ERP systems were designed to be static over the years to support business

models that did not change as much as they do today. Putting a legacy ERP solution on a hyperscaler cloud adds little value to digital business. Leading enterprises expect more. The need to overcome the hurdles of legacy systems has pushed enterprises to explore next-gen ERP systems that are cloud-native by design. Oracle Fusion Cloud Applications is an example of the next-gen ERP systems that are available today.

Summary & Key Takeaway

For decades, companies have been using enterprise resource planning (ERP) systems to improve the efficiency of their business processes. In the last decade, however, the digital revolution has been disrupting business models with completely new supply chain, production, delivery and sales processes. Consequently, ERPs that were designed and implemented before the digital revolution can no longer offer a competitive edge. Hosting one of these legacy ERP solutions on a hyperscaler, such as Microsoft Azure, AWS or

Google Cloud, does not transform the monolithic design of a legacy ERP. Its limitations are ported to the cloud, which can be frustrating for a digital company that expects agility and flexibility to reconfigure business processes dynamically. Companies need to rethink their application strategies and replace legacy systems with modern, cloud-native solutions. Oracle has developed a set of business applications that go way beyond a legacy ERP scope to enable a future-ready digital platform.



Perspectives

Trends

Cloud-native solutions are designed with security and integration in mind to make them easy to adapt to new business processes. A cloud-native ERP offers modularity for easy configuration and consumption of cloud services, rapidly adapting to ever-changing business needs. In the future, these cloud-native ERPs will be even more granular than today, with more microservices and APIs for consistent integration with external services and to enable dynamic reconfiguration of business processes.

A legacy ERP system uses data silos to support business decisions. All data resides inside the ERP, disconnected from suppliers and supply chain data, and from customer data in the CRM system. Legacy ERP solutions solve this problem by copying data into a data warehouse for reporting and analysis. However, a data warehouse is a copy that maintains a second version of the truth, which is not conducive to reliable analysis. A cloud-native ERP is open for data sharing with customers and partners, enabling companies to predict supply and demand based on data belonging to suppliers, partners, customers, data providers, and social media platforms. With artificial intelligence (AI), data can be extracted from text, call centers, voice, video, images, and workstream collaboration tools such as Slack. A cloud-native ERP offers much richer data insights by merging business transactions and a wide variety of internal data with external data sources.

The openness of a cloud-native ERP helps in creating a data-rich enterprise that can explore data monetization. The term “data monetization” refers to both selling data (for example, product sales by region, market trends and other structured data sets) and increasing revenue by using data (data insights obtained through machine learning). A modern digital platform supports the creation of data-based products, thereby enriching a company’s portfolio and stockholder value. The monetization goes beyond selling data. ISG research studies found that companies can increase sales and profits by secure, consistent deployment of machine learning and real-time analytics for cross-selling, upselling, dynamic pricing, bundling of products and services,

procurement price predictions (such as best time to buy), customer experience improvements, employee satisfaction and other AI-based processes that deliver business value.

Even in these early days of AI and business automation, companies cannot ignore the business value of a cloud-native ERP.

Challenges

Modernizing legacy ERP systems is most likely impossible because they were designed with immutable data architectures in support of rigid end-to-end business processes. Typical examples are procure-to-pay (P2P) and order-to-cash (O2C) functions, both designed in the 1980s. These old models do not include dynamic pricing, services blended with products as-a-service, subscription-based assets, elaborate financing, instant payments and many other functions that are common today. Companies have put substantial investments into customizing their ERPs throughout the years to accommodate market dynamics. Now that it is time to replace these obsolete ERPs, some companies try to “go back to standard,” which could mean abandoning the innovations that are essential for digital enterprises. For these reasons, many enterprises opt for a brand-new ERP implementation rather than trying to fix the old design.

Some companies use a single tenant private cloud hosted on a hyperscaler’s public cloud infrastructure to overcome the deficiencies of their legacy ERPs. They try a “technical upgrade,” moving configurations and processes “as is” into an ERP running in the cloud. Infrastructure becomes pay-per-use and software licenses becomes pay-per-user. Next, clients integrate new cloud applications with their legacy ERP to compensate for technical debt. This workaround is known as sidecar approach, consisting of modern applications and technologies such as AI, machine learning, IoT, mobile applications or any cloud-native application running on the side. In simple terms, innovations that add business value run outside the legacy ERP. However, this strategy does not eliminate data silos. Instead, it amplifies the issue because legacy ERP data is extracted and replicated into cloud applications or databases, creating many copies



of the same data in multiple places. This results in more costs for data management, storage and processing, and inevitably reduces the reliability of the data and subsequent analysis. A better approach is to open the ERP to accepting API requests so data does not have to be replicated to take advantage of new developments.

A robust solution for data management would require a unified data model that a legacy ERP does not provide (each ERP module has its own data definitions). In the past, running queries across modules could suffice for reporting. Today, enterprises expect to use AI for richer data analysis and to build decision making solutions that go way beyond reports based on queries. However, the skills to modernize legacy ERP data and structure AI analytics are scarce in the market. When developing modern analytics, enterprises quickly discover that legacy ERP data is insufficient because it did not capture transaction details, or because data silos (ERP modules) have disparate data structures. Inadequate data quality and the lack of available experts can restrict data monetization opportunities. For most enterprises, building brand new data analytics can be more efficient than leveraging legacy ERPs.

When running legacy ERPs in the cloud, enterprises' capacity to differentiate from their competitors is tied to the innovations offered by the hyperscaler's public cloud infrastructure. This creates dependencies of operating systems, virtual machine options and the APIs with the legacy ERP to other applications. Updates to the operating system, integrations and cloud services depend on the infrastructure provider's priorities. For example, if clients require more capacity or processing speed, their options are restricted to virtual machine memory and storage availability in the hyperscaler data center that is hosting their ERP. For single-tenant ERP solutions running on public clouds, clients also manage operating system (OS) updates, application patches, and management tools, which require planning and testing to avoid problems.

Cloud providers can offer physically segregated data centers (regions) to enable higher resilience, proximity to clients' sites, and low-latency connectivity. However, not all cloud regions offer the same set of cloud services. Clients need to check which regions support their ERP technology, integration, and resilience requirements.

In addition, a legacy ERP running on cloud provider A will differ in cost and performance from the same ERP running on cloud provider B, because they use different management tools and technology underneath. Hyperscalers add their own complexity. They use unconventional names for trivial infrastructure services, imposing a long learning curve and extensive certification program. One of the hyperscalers has adapted its solutions to the cloud while keeping licensing terms that are complex to manage and understand. A simple thing like storage is called Blob on one hyperscaler and Bucket on another, without any reasoning behind. Also, the same word, such as serverless, can have different meanings and functions on each platform. In many cases, hyperscalers' features and functions are not interchangeable and enterprises cannot leverage their investments in learning and certification across hyperscalers. Clients end up using many uniquely named services, each with a particular usage metric, thus justifying the emergence of FinOps platforms dedicated to consolidating and demonstrating cloud usage and cost. These characteristics can lead to confusion, and most of the time clients require assistance. However, hyperscalers' premium support and partners' professional services availability vary by location.

The complexity can become overwhelming. Clients are responsible for integrating ERP products, cloud infrastructures, security tools, disaster recovery and data replication. Clients manage many software licenses (ERP and tools) and maintain many layers of security configurations, in addition to monitoring databases, applications and APIs and resolving their performance issues.



Overcoming the Challenges

Legacy application modernization is complicated, and simply moving a legacy ERP to the cloud does not resolve the obsolescence of business processes. Enterprises should determine their business priorities and check how their digital business requirements compare to modern software-as-a-service (SaaS) platform offerings.

SaaS has a much broader functionality than ERP systems. SaaS naturally incorporates integration and offers functionality through microservices – functions that can be accessed by external applications. For example, an application sends a ZIP code to a URL (web-based application) that responds back with the town name. As part of that, a microservice checks that the request is secure,

queries a database, applies logic and responds to the service request. SaaS platforms are designed with microservices in mind. Their openness attracts many independent software vendors (ISVs), engaging a rich ecosystem. ISVs and clients benefit from well-documented methods to develop custom solutions that can drive high business differentiation.

With microservices and integrations providing granular access to functionality, companies can turn functions and business rules on and off and reconfigure process workflows in response to market dynamics. SaaS offers superior agility to adapt to business changes. Enterprises no longer need to pay attention to infrastructure and its capacity limitations and can instead focus their efforts on their business priorities.

Oracle Proposition

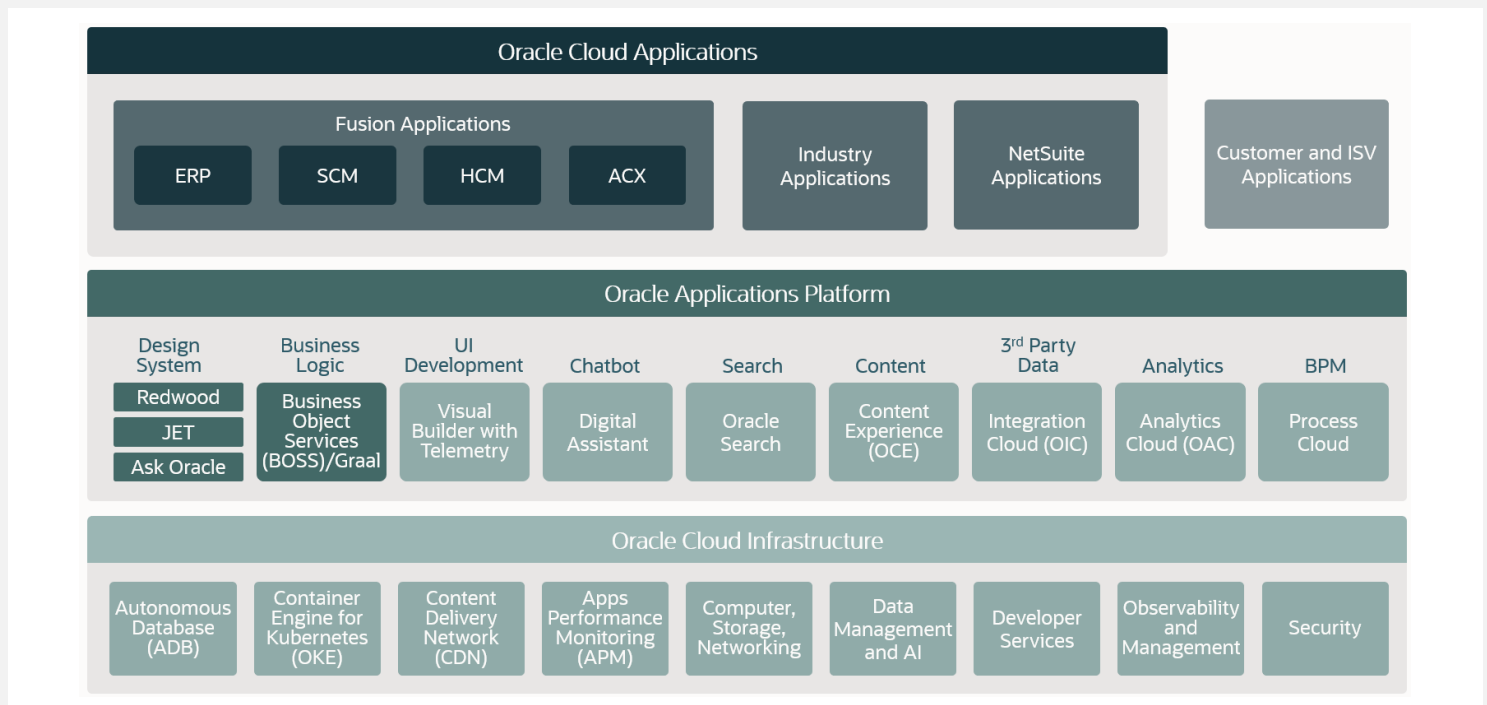
Oracle Fusion Cloud Applications offers a much broader scope than legacy ERPs. It is a SaaS platform built on Oracle Cloud Infrastructure (OCI) that includes cloud-based applications for ERP, enterprise performance management, supply chain management and manufacturing, human capital management, and customer experience.

Oracle Fusion runs in sync with OCI. Clients can grow without being concerned with virtual machine configurations, upgrades, memory consumption, storage size or any other infrastructure aspect. Unlike other vendors, Oracle publishes its pricing structures that are simple to understand. Usage, invoicing, and licensing are also easy to understand and manage.

Oracle helps clients organize their data to elevate their maturity around analytics, machine learning and data monetization. It offers a unified data model and a vast portfolio of data management tools, including extract, transform and load (ETL) functionality to bring legacy ERPs into Oracle Fusion. One of its solutions, Fusion Analytics, integrates all data sources with a single data template for all application modules, in real-time and in memory. All data resides within Oracle autonomous database, eliminating data duplication, complex security configurations and the need for low-latency networks.



Figure 1: Oracle Cloud Applications Platform



Source: Oracle

The company offers modular functionality that is granular enough to enable clients to configure and pay for what they use. Clients do not need to upgrade their licensing to add new functions or integrate external applications to replace a function, making users more effective and efficient.

Oracle Fusion is available in 37 regions (data centers) distributed across 20 countries. Clients can configure high availability and cross-region disaster recovery, with many options for data location and compliance. The company continues to expand its cloud data center footprint, with seven more regions planned for 2022. In comparison, its closest competitor offers ERP functionality in 11 regions in 10 countries.

Oracle Autonomous Database automates operations and adds efficiency and security. In addition, Oracle has a risk management and compliance application to inspect clients' Oracle Fusion configurations to ensure ongoing secure operations and proper governance.

Digital enterprises expect to deliver great customer experiences. Oracle's Redwood for Fusion has a single user interface and user experience for applications on all client devices for a consistent look and feel along with improved usability. Its feature-rich portfolio, including Internet of Things and blockchain functions, offers user-friendly interfaces. The user experience is enhanced with digital agents that are natively integrated into Slack, Teams, Zoom, WhatsApp, email and SMS for a truly digital experience.

Agility is the most valuable differentiation Oracle can offer clients. Enterprises can extend Oracle Fusion and build self-service components that will continue to work after every quarterly update. Oracle provides the tools for secure access, user interface design and digital agents. The toolset includes Oracle Visual Builder, a cloud-based software development platform, and Oracle APEX, a low-code development platform. With Oracle tools, clients can reduce their application development time to market for improved business agility.



Net Impact

Enterprises need robust digital platforms to enable agility and resilience. Legacy ERPs are struggling to support this need, even when they are hosted on public cloud hyperscaler environments. Companies are making decisions backed by real-time analytics more frequently. We live in a data-rich society, with overloading data flowing in the form of videos, images, voice and text that cognitive AI converts to structured data in real time. Any technology developed more than 15 years ago, such as most ERP solutions, was designed to handle transactions confined to stable/static business processes and functions. To survive in the digital era, an ERP platform should be at the core of a digital platform, handling constant change and processing large volumes of data from all sources.

Choosing the wrong ERP platform can impact an enterprise for many years. New imperatives such as customer experience, AI and machine learning, real-time analytics, and agility will continue to be core elements of digital businesses. Failing to integrate with customers and suppliers, and being unable to streamline the capture and processing of many data sources, can put a company way behind the competition.

Oracle Fusion Cloud Applications is efficient in supporting mission-critical business processes, adding leading-edge technologies that provide data insights and automation to help clients anticipate market changes and respond quickly.

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Pedro Bicudo brings extensive experience in the research of the Brazilian and Americas services markets. Pedro is a senior consulting partner at TGT Consult in Brazil. With more than 30 years of experience, he developed vendor assessments plus contract restructuring, services scope and IT benchmarking programs for diverse vertical markets. Before TGT and ISG, Pedro was managing vice president at Gartner Inc. responsible for the consulting business in Asia and Latin America.





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