White Paper

Accelerate Growth with Business Process Innovation Using Oracle Cloud Infrastructure Integration and AI Services

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Frank Della Rosa Mickey North Rizza

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IDC OPINION

Disruption is commonplace in every industry. Adaption in the digital world requires the retooling of current approaches by extending and integrating packaged SaaS applications. As organizations retool their SaaS environments, they must also remember they need to create end-to-end processes that deliver improvements in customer and user experiences. This new customer approach requires a fundamental shift in mindset that prioritizes digital technologies, including artificial intelligence (AI) and machine learning (ML), to address business challenges and opportunities. Referred to as the digital-first approach, it is a hallmark of digital leaders. A digital-first mindset stretches the boundaries of what is possible given common time and budget constraints.

Today, successful outcomes are determined by the willingness to explore the new possibilities of a collaborative innovation-focused culture. IT leaders now leverage a large and growing body of knowledge to support modernization efforts and deliver business outcomes that surpass expectations. Digital leaders leverage technology to build bridges between IT and lines of business, aligning IT strategy and modernization efforts with the business' most important goals. For example, an IT manager responsible for application delivery at a large global manufacturer shared with IDC the team's principal responsibility is to ensure investments in new systems and functionality to support business process innovation are fully aligned with the aspirational goals of the business.

"*Within my team are solutions and adoption consultants who are responsible for doing the intake of business requirements and translating those into functional requirements so our delivery partners can build the solutions.*" — IT manager, multinational manufacturer.

Such work is challenging even for organizations with seemingly unlimited resources. IT must ensure that systems continue to run. Operations must continue even while moving to cloud, digitizing processes, onboarding acquisitions, and orchestrating efforts to replace a legacy application ecosystem with a new generation of connected, intelligent SaaS applications. Adding to the complexity: today's enterprise is more distributed than ever, with remote workers needing secure and unfettered real-time access to systems, applications, and information. This new IT landscape spans multiple public clouds, dedicated clouds, client datacenters, and various edge locations.

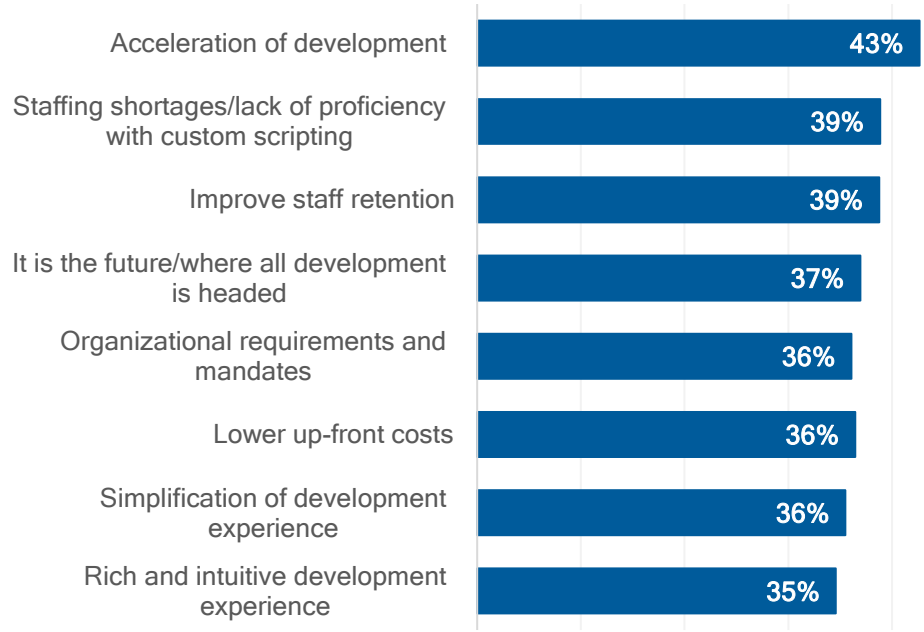
As a result of this shift, business processes designed for work performed primarily in a centralized location must be replaced with digitized processes optimized for greater efficiency and superior user and customer experiences (CX) regardless of the employees' location. And organizations must execute

all these activities at increasing velocity and scale with precision. A CIO of a large conglomerate with more than 300 business units explained to IDC, "*We do mergers and acquisitions day in and day out. System design for enabling an acquisition is a constant process. Work that was scheduled over a three-month time frame in the past must now be completed in several weeks.*"

Digital businesses look toward intuitive, low-code design tools that can unite IT and business stakeholders in transformative collaboration. This unity is needed to meet the increasing demand for continuous delivery of new digital services. Findings from IDC's *PaaSView Research* highlight the cumulative benefits of using low-code design tools for application development (see Figure 1).

FIGURE 1

Benefits of Low-Code Design Tools for Application Development



n = 1,034

Source: IDC's *PaaSView Research,* 2021

Enterprises need a cohesive multicloud and hybrid cloud application development foundation that infuses automation into a fully integrated digital business platform. Integral to this platform are growth accelerators such as low-code design tools and prebuilt, reusable components to support today's dynamic software requirements.

The platform helps IT orchestrate collaborative engagements with line-of-business stakeholders to create automated end-to-end processes. With a cohesive platform foundation, organizations can see measurable improvements in productivity. These improvements are achieved by reducing the time people spend fixing problems and increasing the focus on addressing the initiatives that move the business forward. This contributes greater trust, which helps increase innovation velocity.

To guide successful modernization efforts, leadership needs accurate and timely information. Enterprises can improve decision velocity by leveraging AI and machine learning to gather, ingest, and analyze vast amounts of data. Providing workers with easy-to-use analytics solutions that help them glean new insights and identify opportunities to impact business outcomes positively is essential in this effort. Armed with actionable insights, businesses can see transformational results.

For example, the executive director of IT for a global conglomerate using Oracle Cloud Infrastructure (OCI) shared, "*Our data engineering and data analytics teams were trying to do things on their laptops. We started to share how OCI provides AI and machine learning capabilities by default to help us with the next phase of innovation. This allowed many of our CFOs to have a consolidated data lake without paying extra for AI and ML engines. This was a great use case for where we wanted to be*."

IN THIS WHITE PAPER

This white paper highlights the business drivers that trigger companies to reinvent development frameworks for packaged application extensions and integrations. This white paper also highlights the capabilities and benefits of a next-generation digital business platform to promote collaboration, accelerate innovation, and drive continuous value creation.

SITUATION OVERVIEW

Digital disruption has become a key watch phrase in business today. To remain relevant in an increasingly competitive market, enterprises are under pressure to continuously innovate. They are rewriting rules and adopting new approaches to address operational challenges and market disruptions. The advent of hybrid and multicloud platforms has created opportunities for organizations to retool and streamline business processes, create new solutions, attract and retain talent, and delight customers. In taking advantage of these opportunities, organizations can also reduce costs.

To create frictionless, end-to-end business processes, enterprises are working to modernize on-premises hardware and infrastructure. Although modernizing is not always an easy task, many technology suppliers are delivering innovative offerings that enable digital-first enterprises to thrive using cloud platforms. These platforms accelerate time to value and provide the flexibility and scalability that businesses need to grow and succeed. Accelerating business process innovation has emerged as a powerful differentiator for enterprises in today's market. The enterprises that embrace change and deliver new solutions quickly will be best positioned to win in the long run.

The need for an agile, multicloud and hybrid cloud infrastructure became more pronounced during the COVID-19 pandemic. When COVID-19 hit, businesses were forced to transform operations overnight. Many established organizations struggled because their technology infrastructure was inflexible and ineffective. Adding needed capabilities was a lengthy, cumbersome, and costly process. In addition, the individuals capable of doing the work were hard to find, and expensive to hire. As a result of these challenges, some organizations lost business opportunities and are now scrambling to install a modern technology infrastructure to support today's dynamic and demanding environment.

Digital Transformation Drivers

Organizations look to modern business platforms to drive the digital transformation needed to achieve sustained revenue growth. A modern business platform provides low-code design tools and integration as well as automation services that are designed to efficiently create and orchestrate end-to-end processes. Businesses of all sizes stand to gain a broad range of benefits, including the following:

- **Resiliency.** Organizations rely on modern technology to address operational challenges and achieve aspirational transformation goals. Businesses become more resilient by increasing digital capacity and readiness. At its core, digital capacity is about culture, as an openness to new possibilities manifests in the application of modern technology. The shift in mindset happens when collaboration between business and IT results in better business outcomes that are then shared across the broader organization. The sharing then builds trust and an appetite for even greater innovation velocity. Low-code tools play an essential role in helping businesses build digital capacity by enabling successful collaboration between the business and its IT stakeholders. This type of evolutionary change, made possible by tools like low code, is practical and enduring.
- **Customer experience.** Improving customer experience falls in the top 3 desired outcomes for businesses undergoing transformation. Expectations rise as organizations reap the rewards of being customer focused. AI-enabled automation, featured in the new breed of SaaS applications, allows organizations to scale personalized experiences that create greater loyalty and share of wallet. Automation also enables the business to engage customers in new and differentiating ways.
- **Employee productivity.** People working in different departments need a unified view of the business. Over time, the business accumulates vast data stores that remain isolated in application and functional silos. When businesses need to create seamless experiences, many organizations are hamstrung in their attempts to consolidate required information. The process of gathering, translating, cleansing, enriching, and ingesting data typically requires a great deal of effort. IT must work with business stakeholders to identify and consolidate the relevant data based on the required decisions.
- **Better, faster decisions.** Once data is unified, businesses need to empower knowledge workers with modern lakehouse analytics. Business experts and data analysts need easy ways to generate insight from structured, unstructured, and semistructured data. Visual automation and self-service analytics help guide and accelerate process changes with machine learning. Data integration enables event-driven analytics to help enterprises recognize correlations and achieve transformational business results.

SaaS: The Lynchpin of Digital Business

As the largest and longest-standing cloud segment, SaaS continues to enable businesses along the transformation journey. Modern SaaS applications, including ERP, HCM, and SCM, feature AI-enabled automation to power a broad range of digital business processes. Disruption caused by the global pandemic sent SaaS adoption into overdrive. IDC's *SaaSPath* global survey found that 45% of businesses currently use SaaS ERP and 46% plan to move to a SaaS ERP solution. Now specialized SaaS applications are available for every functional market.

SaaS applications are more resilient and extensible than traditional on-premises applications. Companies are no longer burdened with the time-consuming and costly overhead of allocating hardware resources or maintaining on-premises technology infrastructure. Cloud platform capabilities, including integration services and low-code designers, have fundamentally changed how business analysts and developers automate end-to-end enterprise processes.

While SaaS applications address the majority of what is needed, many businesses have unique requirements that must be addressed through extensions and customization of business applications. Leveraging embedded cloud platform capabilities such as AI and machine learning enables business experts, data analysts, and cloud developers to quickly deliver process innovations. Automating end-to-end workflows improves operational efficiency and simplifies management. By liberating technical and business experts from repetitive activities, companies build the capacity they need to deliver differentiating compelling experiences that in turn create loyal customer advocates and increase employee engagement.

MAXIMIZE THE FULL POTENTIAL OF DIGITAL

Technology's potential is inspiring, but digital business success requires organizational and architectural best practices. Companies have invested in legacy solutions that support daily business operations and foundational processes; enterprises need these solutions to continue to function as infrastructure is revitalized. Modern business systems are powerful and can be complex to connect, extend, and manage. With most businesses adopting a multicloud or hybrid cloud approach, keeping innovation projects on time, in budget, and properly staffed creates challenges that must be addressed. Modernization and transformation processes cannot be outsourced entirely. The ability to quickly sense and adapt to opportunities has become an imperative for survival. This set of competencies must be developed in-house because of each business' unique way of functioning.

To successfully make the transition to the digital world, enterprises need a comprehensive software development ecosystem that works across cloud and on-premises business systems while at the same time limits technical skill requirements. Modern digital platform services, such as OCI, enable businesses to run their current and future workloads on a next-generation platform that includes a comprehensive set of digital capabilities to accelerate innovation. When evaluating modern platforms, organizations should look for the following features and capabilities:

- **Visual, low-code development tools:** Organizations looking to extend SaaS application functionality and build new digital products can benefit from low-code development tools with visual design capabilities. Visual design tools enable agile and collaborative development, version control, and continuous delivery automation. For example, OCI Visual Builder helps enterprises extend the value of SaaS applications using the same development platform that runs Oracle Cloud Applications.
- **Artificial intelligence services:** AI services can help organizations create conversational experiences with their customers, such as text, chat, and voice interfaces. Application owners can get started with prebuilt templates to provide chatbot functionality to business users. Developers can build on the library of templates and create custom applications to automate the customer experience.
- **Enterprise connectivity and automation:** An enterprise connectivity and automation platform can help organizations quickly modernize applications, business processes, APIs, and data. Developers and cloud architects can connect any SaaS and on-premises application six times faster with a visual development experience, prebuilt integrations, and embedded best practices. Application connectors can enable native access to events in tools such as Oracle Cloud ERP, HCM, and CX.

- **Process automation:** Process automation with drag-and-drop design can simplify workflows and approvals across applications. Business analysts and cloud developers can collaborate using prebuilt templates to combine and streamline end-to-end processes. Enterprises can build digital workforce capacity by orchestrating human, digital assistant, and RPA activities with business systems.
- **Data integration:** Data engineers and ETL developers could use a fully managed multitenant service to accelerate data science and analytics projects. No-code dataflow modeling can help enterprises quickly configure integration parameters and automate data mappings. Visual designers can simplify common ETL tasks such as ingesting data from various data assets and then cleansing, transforming, enriching, and efficiently loading it to target data assets.
- **Event streaming:** Developers and data scientists can use a real-time, serverless, Apache Kafka-compatible platform to ingest and consume high-volume data streams in real time. Important considerations for such a platform include being fully managed, scalable, and durable. Streaming data should also be encrypted both at rest and in transit to ensure message integrity. Prebuilt integrations can also simplify setting up, scaling, and patching big data pipelines.
- **Observability:** A comprehensive set of management, diagnostic, and analytics services can help companies reduce the complexity, risk, and cost of managing multicloud and on-premises environments. These services could enable easy diagnostics of cloud-native and traditional technologies deployed in the cloud or on premises. With built-in machine learning, the services could detect anomalies in real time and help operators respond more quickly.

Low-Code Design

When looking for low-code design tools, enterprises should consider those that empower customers to efficiently tailor applications to address unique business requirements. Low-code visual designers and prebuilt application connectors are expected to enable users to deliver digital innovations in hours rather than months.

Businesses also benefit from low-code integration and process automation platforms in their ability to increase the speed of delivery for new digital services, event-driven applications, and unified workflows. Such a platform should enable businesses to architect and automate end-to-end processes that underpin customer and employee experiences. In addition, the platform should simplify the connection of business systems, environments, and ecosystems that often stem from merger and acquisition activity. The resulting agility is a hallmark of successful digital businesses and a key to activating new value streams.

Companies limit the cost and complexity associated with supporting a myriad of point solutions by shifting the focus to a central business platform that unites public cloud infrastructure with a new generation of cloud applications. Low-code and no-code developer tools help businesses extend application functionality while simplifying data and systems integration.

For example, enterprises can leverage Oracle's OCI solutions to assist them. Many organizations use cloud-native application development coupled with Oracle's AI services and low-code application development to create an adaptable environment. And still others utilize on-premises application modernization coupled with Oracle's AI services and low-code application. In doing so, businesses balance today's operational needs with the changing needs of customers, an increasingly decentralized workforce, and chronic disruptive forces, including potential talent shortages. In short, businesses innovate more with less testing and rework and using tools that are at their disposal to make the digital business more successful.

A PLATFORM FOR DIGITAL BUSINESS GROWTH: CASES IN POINT

Corporations are beginning to realize the limitless possibilities of digital transformation. This starts by taking stock of the current architecture, and understanding its potential and limitations, and choosing a strategic platform to serve as an integration hub. Digital delivery channels are the method by which customers will experience the company and its products or services, so it is crucial that they provide innovative customer and user experiences.

This section includes examples of global market leaders that continue to realize significant business value from investments in a cloud-based application development foundation. In digitizing their end-to-end processes, these customers have achieved transformative results.

Case 1: Global Media Conglomerate

Challenge

A leading global diversified media, information, and services company with hundreds of business units and more than 10,000 employees needed a toolset to support two facets of its business: the first facet, a continuous improvement program that examines current processes, functions, and issues and then enacts changes that improve the business operations; the second facet, focus on enabling new functionality.

The company had a traditional service-oriented architecture (SOA) custom development environment. The new development was challenging because the firm relied on unique code; a great deal of that code was legacy, which required wrappers and custom development to connect various elements. Features had been built in an ad hoc fashion; the components were not designed to work together, which left little opportunity for reuse. As a result, the integration work was complex, time consuming, and challenging to maintain. Custom on-off code had to be accounted for whenever the system was extended. Whenever a minor release or update or a significant upgrade changed the data schema, the complete integration and automation chain needed to be reworked and retested.

With this complex and time-consuming rework level, the business could not update its software as often as needed. The result: the business could not accept the latest releases of its operating infrastructure and applications. Over time, operational responsiveness was eroded. For example, onboarding a new customer involved sending the company product order data, which then needed to be picked up and processed by the ERP system, and then an acknowledgment had to be generated and sent back to the client. Although this work was a typical integration pattern, it usually took a minimum of two to three weeks. Business units became frustrated because the process was inefficient, confusing, and time consuming.

Enable Collaborative Change

A new approach was needed. In late 2019, the company evaluated the overall development landscape and chose Oracle for its next-generation SaaS suite, including Oracle financials and the company's comprehensive OCI. With OCI, everything is fully integrated and automated. Developers do not have to be concerned with network speed or server capacity. Scaling is on demand. With the ability to quickly scale capacity and leverage OCI automation and integration services, the business could onboard acquisitions three times faster and assimilate needed changes into standard operations with less risk.

This change enabled the company to shift some of the development work to subject matter experts who use OCI integration services, including Visual Builder, to create packaged application extensions with reduced need for business analysts or technical specialists. Delivery times were cut by 50% by enabling business process experts to collaborate more effectively with analysts and cloud architects.

The business process experts can now drag and drop information and create code by following scripts in simple English. A side-by-side comparison between the low-code result and supporting code gives the digital team the ability to rapidly iterate designs and release high-quality web and mobile application extensions.

One of the first applications built with Visual Builder automated a use case. The help desk needed customized forms for capturing the required custom data. The solution was designed and delivered for immediate business impact. Development time improved dramatically — from two to three weeks to a few days. This new level of collaboration between business SMEs, professional developers, and technology specialists quickened the pace of innovation across the business. The IT team equipped business process experts with Visual Builder to automate end-to-end processes, including invoice to receipt. The results have been profound. Operating costs have dropped at least 50%, and development has sped up by upwards of 70%. The team can deliver requested application extensions in less than one week.

Business stakeholders were so satisfied with the results that changes were made to standing internal chargeback arrangements. The company transitioned from project-based process improvements to value-seeking continuous improvement. In the past, the business unit funded each requested change. Today, a set budget allows for as many changes as needed to support performance goals.

OCI enabled the company to substantially reduce the time spent building integrations, allowing the team to handle more requests. The process improvements included augmenting the available data to enhance modeling.

Case 2: International Computer Peripheral Supplier

Challenge

A computer peripheral supplier with more than 100,000 employees spread across the globe has been trying to improve its application development process. The company has spent a lot of time and put a lot of effort into its contact center, which takes calls from B2B customers.

A few years back, the company created a framework that featured agile best practices for use in its projects. The company wanted to separate light development work from heavy development work that required skilled professional developers and technology specialists, which are in increasingly short supply. There were specific rules that are very difficult to put into native applications because the rules support complex workflows and require customizations that were rendered unnecessary with the move to Oracle Fusion Cloud Applications. The goal was to allow business analysts and process experts to visually orchestrate prebuilt services that abstract the deeper technical implementation details.

The company quickly created measurable process milestones by introducing Oracle Intelligent Advisor, featuring an easy-to-use point-and-click visual experience. For example, warranty claims processes focus on service to the customer and measure customer response times, SLAs, customer feedback surveys, and customer satisfaction index levels.

One issue faced by the company was that it struggled to understand when to ship toner to the customer. Rather than shipping toner regularly, the company wanted to achieve just-in-time (JIT) replacement. As soon as the toner leaves the company, it is an untracked, costly asset. Goods were constantly caught in the supply chain, creating problems. In addition to the fact that €5 million worth of products sat on shelves for more than six months, an underground black market arose for toner used with its big printers. Toner appeared for sale — illegally — on eBay and other sites.

To address these problems, the company built rules-based automation; this automation was based on information sent by the printers. The company receives an automated report when toner is running low. The application monitors all the machines across the customer's business and determines if other printers are also running low so that shipments can be consolidated when appropriate.

As a result of the rules-based automation, the company now ships toner just in time, reducing shipments. This has saved millions of euros that had been spent on toner shipped onsite that went unused. The black market has dried up as well.

Case 3: Global Building Supply Company

In business since 1866, this international building improvement company has more than 60,000 employees in 120 countries that support product distribution and customer support through a network of more than 4,300 stores. The company migrated to Oracle Fusion Cloud Applications in 2018. As with other organizations, the goal was to streamline the development process with digital technologies like low-code design tools. IT hoped to leverage OCI Integration with Visual Builder for the ERP ecosystem.

Before OCI, extensions had been built from scratch. Developers had to build a data store and create forms and custom tables. Then developers would code the logic to ensure that all the pieces worked together. The work was complex and time consuming. Product SKUs have many attributes. In addition, some of the product details came from legacy systems and others were rolled in from acquisitions. The volume was very high. One goal was to create a centralized attribute repository to provide a consistent approach for the many users that needed to access product information. The company wanted to avoid an ad hoc, point-to-point integration for each new capability.

The business used OCI Integration with Visual Builder to bring all the needed attributes together across its product domain, enabling developers to add functionality much more quickly and subsequently deliver a superior user experience. Since 2018, the company has completed about 500 integrations. The extended IT team relies on a two-tiered approach to manage a rapidly growing pipeline of requests. IT reviews the large divisional organizational initiatives and uses a governance process to prioritize the first-tier projects. These are the large-scale, broad-scope initiatives that can drive more value for the organization. The second tier consists of a large list of items that are less complex but still contribute to business value. Adoption of OCI Integration with Visual Builder has resulted in an attention-grabbing 60% decrease in the time, effort, and personnel needed to deliver new capabilities.

"*It becomes a very integrated experience where extensions or the application we are using with VBS are already there as a core part of OCI. You're not trying to figure out how to publish or how to consume any of the existing integration sites.*" — Executive director, IT

"*Once people saw the capability, they started asking if we can build outside of [the initial case]. Now it's not just a CMX extension for the ERP. It's giving [us] the full-fledged custom platform for managing the business functions. All the data gets sourced back into one of the warehouses to enhance the performance of algorithms. They can run the reports, run analytics. All of it on the data that's also being captured by the VBS function.*" — Executive director, IT

CONCLUSION

Oracle builds on its APEX low-code leadership with OCI integration, automation, and conversational AI services to provide a credible choice for enterprises that need to quickly connect and extend their application and data portfolio in a hybrid, multicloud environment.

Digital transformation is now a business imperative as organizations across industries are looking to modernize their applications and infrastructure. This modernization effort is necessary for organizations to be more agile and adaptable to meet the needs of today's dynamic environment. Achieving resiliency, improving customer experience, and increasing employee productivity are just some of the objectives businesses are looking to achieve through digital transformation. Key ingredients in reaching these objectives include low-code design tools, application and data integration, and process automation, all of which can help organizations build transformative, modern solutions.

While OCI services are used by Oracle Fusion Cloud Applications, they work equally well with any application or data system to help business and technical experts get more from their enterprise applications and partner ecosystem. IDC recommends that organizations consider OCI low-code services to reduce delivery times and operational overhead.

For companies with highly customized on-premises applications such as E-Business Suite, PeopleSoft, or JD Edwards, SOA on OCI enables them to move existing connectivity to the cloud in minutes rather than days. A single SOA adapter provides easy interoperability with OCI integration services to help protect existing investments and close cloud skill gaps for technical specialists.

With a low-code approach to application and data integration, businesses can quickly connect any application and data source, automate end-to-end digital processes, and centralize management. This allows businesses to focus on continuous development of differentiating digital capabilities that deliver impressive results and contribute to sustained growth. OCI can help businesses achieve these objectives. The following are just some of the performance improvements made possible through the combination of a digital-first mindset and OCI:

- Achieve delivery that is five times faster without the traditional coding-intensive approach
- Reduce build times by 50% or greater with prebuilt connectors and drag-and-drop, low-code design tools
- Gain push button access to frequent design releases that increase design velocity
- Eliminate the need to completely rewrite existing SOA integrations
- Achieve easy interoperability with OCI Integration using a prebuilt SOA adapter
- Simplify SaaS upgrades with OCI services that eliminate the need for complex customizations
- Establish standard SLAs for availability, manageability, and performance
- Attain unified observability and exception handling with OCI Manageability and Insight
- Differentiate customer experiences with digitized processes and workflows that span functions, systems, and locations
- Leverage a next-generation digital business platform that simplifies integration and unifies data and business processes across applications and functions
- Improve collaboration by actively engaging cross-functional stakeholders throughout the design-build-test-run life cycle

Oracle delivers a comprehensive platform that includes all the elements businesses need to execute a seamless transition from legacy to a modern digital development foundation. With Oracle Fusion Cloud Applications and OCI integration and conversational AI services, enterprises spend less time on configuring infrastructure and more on composing application extensions that grow the business.

About IDC

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Global Headquarters

140 Kendrick Street
Building B
Needham, MA 02494
USA
508.872.8200
Twitter: @IDC
blogs.idc.com
www.idc.com

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