



## WHITE PAPER

# Platform as a Service: Empowering Digital Transformation

Sponsored by: Oracle

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## EXECUTIVE SUMMARY

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Traditional business models are increasingly being disrupted by newcomers providing customers with a multichannel digital experience. IDC predicts that integration, consolidation, and rationalization in marketing technology will make up an average of 35% of total marketing technology budgets by 2015.<sup>1</sup> With the rapid growth of mobile devices, speed to market is important for businesses competing for customers with dynamically changing needs. The ability to quickly change internal processes to match dynamic environments can be a differentiating factor for successful businesses. The platform-as-a-service (PaaS) market is flourishing because it helps businesses accelerate adaptation and innovation. PaaS offerings are helping IT departments with cloud and mobile enablement of their new and legacy applications while accelerating the delivery and scalability of those applications. While cloud technology that enables PaaS is fluid and changing rapidly, Oracle, with its public and private cloud solutions, is building a competitive position in the market by offering:

- A broad range of services varying from raw compute and storage to mobile, Big Data, process, and document management to enable assembly of custom applications with a wide range of capabilities
- Deployment choices and portability between public and private environments
- Oracle database software, Java, and associated standards that give Oracle a PaaS technology with a foundation and components that have wide awareness and acceptance among enterprises
- A single platform for mobile, on-premise, and cloud applications that makes it easier to build and maintain business solutions using a comprehensive and unified set of integrated components
- Services that optimize application development and delivery to address needs across IT and non-IT departments including development, IT operations/architects, and individual lines of business
- Capability for customers to implement middleware solutions, thus providing users with a digital experience connected with existing back-end systems

## SITUATION OVERVIEW

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Businesses need an agile platform to quickly build, test, and scale new application services and react to the digital disruption occurring in their markets. Digital disruption is accelerating because of the increasing integration of processes and information to yield real-time decisions. Customers are attracted to integrated, turnkey platform-as-a-service offerings because they provide the key tools to help IT development and operations organizations adapt to the rapid growth of mobile devices and cloud-based resources, including information, applications, services, compute, network bandwidth, and storage. PaaS offerings are helping IT departments with cloud and mobile enablement of their new and legacy applications while accelerating the delivery and scalability of those applications. PaaS is also helping IT meet increasing business-side demands to speed application development, delivery, revision, and maintenance.

Businesses that do not embrace the changing demands of customers and the technologies that parallel those demands risk their market share and growth opportunities.

IDC's demand-side research shows that more than four out of five midtier and large business respondents to a fall 2014 survey indicated interest in public cloud services.<sup>2</sup> While customers began their cloud journey using public clouds to test and develop applications, a large percentage of customers are now running their production applications in a public environment. Regardless of the implementation model, IDC sees investment in cloud software and the PaaS market growing at a much higher pace than investment in traditional software. While the overall application development and deployment market is expected to grow at an annual rate of about 8% from 2013 to 2018, the PaaS market is expected to grow at about 27% for the same period. This projection reflects IDC's belief that demand from customers will grow this transformational technology and that all major providers will offer public, and eventually private, PaaS to serve their customers.

PaaS-enabled IT is used as a competitive differentiator in application development and delivery, helping provide customers with benefits in the following categories:

- **Business models:** With the proliferation of mobile devices, businesses have to cater to interacting with customers through multiple platforms. Promotions are individualized and targeted based on geographic preferences and availability of product at the store level. Multichannel engagement is becoming a necessity to maximize sales.
- **Agility:** Customer expectations require that businesses rapidly respond with digital initiatives in providing an integrated customer experience with multiple touch points. Developers need the capability to code, revise, and deploy applications at a much faster pace than is possible with traditional software. Self-service and infrastructure automation characteristics like autoscaling reduce the complexity of application development.
- **Change:** Once an application is deployed, there is also a need to adapt to changing business conditions ranging from geopolitical changes to unexpected competitive pressure. Standardization of application components enables standard scripts to automate developer processes like testing, resulting in a faster change/deployment process.

All these benefits may be realized with a minimal learning/disruption curve when PaaS products leverage popular languages and frameworks.

Key PaaS components per IDC's software taxonomy are as follows:

- **Cloud application platforms (CAPs)** provide a set of abstracted services and tooling focused on application deployment and have a high level of commonality with and relevance to the deployment of almost any application, regardless of platform.
- **Cloud application development and life-cycle services (CADLS)** provide a set of abstracted services and tooling to facilitate the development and enable the deployment of an application as well as manage its ongoing operation.
- **Cloud data services (CDS)** bring together data from a variety of on-premise and cloud sources to deliver business value through analytics leveraging Big Data technology. A cloud-delivered data platform helps companies keep up with growth of data without overwhelming their on-premise datacenters.
- **Cloud integration services (CIS)** use a cloud-based broker to support and service the manual or automated exchange of structured messages and files between two or more clouds, between a cloud offering and a private datacenter, or between two or more parties.

While the components discussed previously show the current state of PaaS offerings, IDC sees vendors covering new services like document management, cognitive/machine learning, mobile, and Internet of Things (IoT). Besides meeting business needs in a timely manner, a broad portfolio of services gives customers a larger variety of components to draw from.

## Oracle Company Overview

Oracle is a public company founded in 1977 with the goal of commercializing relational database technology. Oracle expanded its portfolio organically and via acquisitions to include applications, consulting, middleware, and hardware. For fiscal year ending May 31, 2014, Oracle reported revenue of \$38.3 billion, up 2.9% compared with the previous year. Software made up 76% of Oracle's revenue: New software licenses and cloud software (SaaS and PaaS) made up 28%, license updates and support accounted for 47%, and IaaS accounted for 1%.

Oracle's major acquisitions related to the company's PaaS offerings include Tangosol (Coherence) in 2007, BEA (WebLogic Server) in 2008, and Nimbula in 2013. Infrastructure-related acquisitions supporting the private PaaS model include Sun Microsystems in 2009 and Xsigo in 2012.

## Product Description

### Oracle Cloud Platform as a Service

Oracle's public cloud PaaS is part of the Oracle Cloud consisting of a cloud-based development platform, cloud-based applications, and a cloud-based application/services marketplace. Private cloud deployments are offered through Oracle Private Cloud Solutions. Both public and private Oracle PaaS offerings leverage a full stack of Oracle technologies. The latest versions of Oracle Fusion Middleware 12c and Oracle Database 12c were released in CY14. Oracle Cloud Application Foundation is the middleware platform underlying Oracle's public cloud offerings and on-premise private PaaS deployments. It consists of Oracle WebLogic Server (the application platform for conventional and cloud applications), Oracle Coherence In-Memory Data Grid, Oracle Tuxedo for C/C++/COBOL applications, modern development tools, and a set of management tools. Oracle Cloud Application Foundation products are

optimized to run on Oracle Exalogic Elastic Cloud for on-premise cloud deployments and are available on third-party clouds for increased deployment flexibility.

Oracle Cloud PaaS helps developers rapidly build and deploy rich applications or extend Oracle Cloud SaaS apps. It offers a range of platform (development/management/integration) and infrastructure (compute/bandwidth/memory) services.

Oracle uses the same standards, architecture, and products in public and private clouds. This capability benefits customers looking for enhanced portability of workloads in a hybrid architecture. Portability also gives customers the choice of a variety of public cloud vendors when bursting from or coexisting with a private cloud environment.

Oracle PaaS software, in addition to being offered in Oracle's public cloud, is offered through a subscription model in other public clouds, including Amazon Web Services, Microsoft Azure, and Verizon Cloud.

Services offered as part of the Oracle Cloud PaaS include:

- **Database:** Database Cloud Service (full-featured Oracle Database in the cloud) and Database Schema Service (dedicated and isolated database schemas in the cloud)
- **Database Backup:** Scalable and reliable object storage solution for storing and accessing ever-growing Oracle Database backup data
- **Java:** Java Cloud Service (full-featured Oracle WebLogic Server in the cloud) and Java Cloud Service – SaaS Extension (dedicated and isolated WebLogic instances in the cloud for SaaS extensions)
- **Document Cloud Services:** File sync and share (including iOS and Android devices and desktop syncing) and integration with Oracle WebCenter Content and other Oracle Cloud applications
- **Developer Cloud Service:** Cloud-based development environment with auto-deployment to Java Cloud Service or local infrastructure, life-cycle management, continuous integration, and collaboration features
- **Business Intelligence Cloud Service:** Mobile device-enabled analytics platform including advanced analysis and visualization and integration options from self-service import to operational extract, transform, and load (ETL) updates
- **Mobile Cloud Service:** Popularly called mobile back end-as-a-service (MBaaS) platform; helps developers create, deploy, and manage mobile applications that connect to back-end systems and includes common mobile services and built-in mobile application monitoring and analytics
- **Big Data Cloud Service:** Hadoop as a service scalable to petabytes of data
- **Integration Cloud Service:** Prebuilt integrations for Oracle SaaS and visual integration designer for all other applications, open connector SDKs, transformation of integrations into APIs for external consumption, monitoring of transactions and KPIs
- **Big Data Discovery (in beta):** Hadoop-based data visualization tool
- **Process Cloud Service (in beta):** Design, automate, and manage business processes in the cloud

Table 1 maps PaaS expectations of agile enterprises with a description of Oracle's offerings.

**TABLE 1**

**Key PaaS Features: Oracle Public and Private Clouds**

Key Capabilities	Description
Underlying PaaS technology	<ul style="list-style-type: none"> <li>Oracle Fusion Middleware and Oracle Database technologies</li> </ul>
Public, private, and hybrid clouds — Are apps easily portable among them?	<ul style="list-style-type: none"> <li>Public and private cloud (public with Oracle Cloud; private with Oracle Private Cloud Solutions) (Applications can be moved between public and private cloud. The same standards, architecture, and products are used in public and private clouds.)</li> </ul>
High availability (HA) via multiple certified datacenters, geodispersal, high-performance hardware/software — How is this achieved and to what level?	<ul style="list-style-type: none"> <li>Oracle Maximum Availability Architecture addresses unplanned downtime (from component failures to site outages) and planned downtime (including upgrades, patching, integration, and migration) to meet uptime SLAs for mission-critical applications.</li> <li>Oracle Cloud services and private cloud solutions offer high availability. For example, Oracle Java Cloud Service offers simplified provisioning, management, and operations of WebLogic Server clusters and supports deployment of managed servers to individual virtual machines. The built-in software load balancer will load balance workloads across failed nodes within a cluster. In private cloud, Oracle Enterprise Manager can be configured in HA mode in both the app tier and the database tier. The management servers can be front ended by a load balancer.</li> </ul>
Elastic scaling	<ul style="list-style-type: none"> <li>A WebLogic Server cluster consists of multiple WebLogic Server instances running simultaneously and working together to provide increased scalability and reliability. The capacity of an application deployed on a WebLogic Server cluster can be increased dynamically to meet demand, providing cloud elasticity.</li> </ul>
Infrastructures directly supported	<ul style="list-style-type: none"> <li>Oracle Cloud; Oracle PaaS services are supported on Amazon Web Services, Microsoft Azure, and Verizon Cloud.</li> </ul>
Languages directly supported	<ul style="list-style-type: none"> <li>Java, JavaScript, other Java-based scripting languages (JRuby, Scala, etc.); SQL and PL/SQL Generic Java SE support and Node.js on road map for Oracle Cloud</li> </ul>
Multitenancy — being able to share the abstracted infrastructure in an efficient manner delivered through virtual machines (VMs) and/or databases	<ul style="list-style-type: none"> <li>In public cloud, Oracle offers isolation and multitenancy using VM and schema-based isolation. Oracle's database software directly supports multitenancy, and WebLogic supports multitenancy via the Oracle Database and will eventually directly support multitenancy.</li> <li>For private cloud, Oracle Enterprise Manager 12c supports multitenancy via: <ul style="list-style-type: none"> <li>Server virtualization to provision databases packaged as VMs</li> <li>A number of databases sharing the operating system deployed on a single instance or RAC</li> <li>At the application level, deploying multiple schemas within the same database</li> <li>A pluggable and container database with the Oracle Database 12c multitenant option</li> </ul> </li> </ul>

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Key Capabilities	Description
<p>Development — tools that allow developers to handle the complete app/dev life cycle, including project management, utilizing one or more development methodologies, troubleshooting, version control, and updates</p>	<ul style="list-style-type: none"> <li>▪ Oracle Developer Cloud Service supports the complete development life cycle, including GIT, Hudson, wikis, and issue tracking. The service is fully integrated with other Oracle Cloud Services such as Java Cloud Service and with JDeveloper and Eclipse.</li> <li>▪ Supports IDEs such as JDeveloper, Eclipse, and NetBeans</li> </ul>
<p>Security — features at the infrastructure and application levels (via roles and/or permissioned environments, hardware and datacenter certifications and best practices, integration with existing IAMs, how data in motion and data at rest are secured) to yield development and production processes that meet compliance requirements, performance SLAs, and security objectives</p>	<ul style="list-style-type: none"> <li>▪ Oracle's Key Vault key management service provides security across middleware, databases, and servers. Oracle Identity Management supports Oracle's public cloud identity infrastructure for all of Oracle's IaaS, PaaS, and SaaS offerings. Oracle's Identity Cloud Service is used for identity federation and extending on-premise identity to the cloud.</li> </ul>
<p>Integration — connecting applications and endpoints easily so that a comprehensive business problem can be resolved by combining the capabilities of diverse resources; APIs — How are they consumed and published and managed by the CAP? Is the CAP API published and easily accessible to third parties?</p>	<ul style="list-style-type: none"> <li>▪ Oracle Integration Cloud Service integrates with and runs on the cloud to connect on-premise apps, Oracle Cloud, and third-party SaaS apps via out-of-the-box connectors. Oracle's integration portfolio (Oracle SOA Suite, SOA Suite as a Service, Data Integration Suite, and Integration Cloud Service) offers different integration types — applications, services, data, and events — using various connectivity protocols, including Web services like SOAP and REST. Oracle Data Integrator and Oracle GoldenGate move data between systems in the cloud and on-premise in batch or real time to enable fully integrated hybrid IT environments.</li> </ul>
<p>Data services — database management and analytics: What databases are directly supported (Oracle, SQL Server, MySQL, NoSQL, Hadoop, etc.)? What analytical tools are supported?</p>	<ul style="list-style-type: none"> <li>▪ Supported databases include Oracle Database, Microsoft SQL Server, IBM DB2, MySQL, and Sybase. Oracle also supports Hadoop with its Big Data Cloud Service (Hadoop as a service scalable to petabytes of data) and Big Data Discovery (a Hadoop-based data visualization tool).</li> </ul>

**TABLE 1**

**Key PaaS Features: Oracle Public and Private Clouds**

Key Capabilities	Description
<p>Mobile enablement: How do developers develop mobile apps in this product, and does it include a native MBaaS or offer a third-party equivalent?</p>	<ul style="list-style-type: none"> <li>▪ Oracle Mobile Application Framework provides cross-platform mobile app development for iOS and Android through a hybrid mobile architecture that leverages HTML5, JavaScript, and Java.</li> <li>▪ Mobile Cloud Service (MBaaS) includes a development environment to define mobile interfaces and APIs and provide enterprise data connections and back-end services.</li> <li>▪ Oracle Mobile Security Suite provides a container-based approach to securing corporate information and applications regardless of whether they are deployed on corporate or personal devices. Mobile security provides identity management with secure containers, sign-on, and governance.</li> </ul>
<p>Container paradigm: How is app configuration and portability achieved for testing and production? (Warden, Warden/Docker, Buildpack (Heroku/Salesforce), proprietary, virtualization)</p>	<ul style="list-style-type: none"> <li>▪ In this environment, Oracle WebLogic Server and Oracle Database are supported as the prime runtime environments for custom/bespoke and Fusion Middleware applications. Future plans include supporting container-based solutions (such as Docker on WebLogic in early 2015).</li> </ul>
<p>Management functions: Application and infrastructure management, provisioning, deployment, performance monitoring, reporting, troubleshooting, and analytics</p>	<ul style="list-style-type: none"> <li>▪ Oracle Cloud and private cloud offer monitoring through the overall cloud portals (public and private) as well as within the individual PaaS offerings. For example, in Java Cloud Service, there are not only detailed metrics around the Oracle WebLogic Server availability and workload characteristics but also more details within the product consoles that are part of the public and private PaaS solutions.</li> </ul>
<p>Pricing models</p>	<ul style="list-style-type: none"> <li>▪ Pricing models include à la carte pricing based on services and resources used and monthly fixed subscriptions, also based on resources and services used.</li> <li>▪ Oracle Cloud service pricing is published on <b>cloud.oracle.com</b>.</li> <li>▪ Oracle's private cloud pricing model follows traditional software licensing.</li> </ul>
<p>Marketplace availability – mechanism to allow users to easily assemble or supplement solutions using applications, services, or APIs offered by the vendor and third parties published in a common catalog; describe the size of the catalog and key offerings</p>	<ul style="list-style-type: none"> <li>▪ Oracle Cloud offers the Oracle Cloud Marketplace — an online store to find and start using software and services that run in the Oracle Cloud. The marketplace features partner business applications in the categories of enterprise planning, marketing, sales, service, social, and talent management.</li> </ul>

Source: IDC, January 2015

## Customer Summary

### *Customer Background*

Dallas-based 7-Eleven was founded in 1927 as a single ice house in Oak Cliff, Texas. Since then, 7-Eleven has become the world's largest operator, franchisor, and licensor of convenience stores with more than 53,000 outlets. The stores are located in 16 countries. Japan (15,000 stores), the United States (8,200 stores), Thailand (6,800 stores), Indonesia, Canada, the Philippines, Hong Kong, Taiwan, Malaysia, and Singapore are its largest markets.

In 2012, the innovation team at 7-Eleven identified digital channels and the expansion of consumer needs to become personally connected as key development targets as part of a corporate strategy initiative. Its competitors were adopting mobile and loyalty strategies to become more guest centric and influence buying behavior. 7-Eleven began developing its Digital Guest Experience (DGE) to become more relevant to existing guests, invite and engage new guest relationships, and gain loyalty to the 7-Eleven brand.

7-Eleven saw its guests and potential guests as highly mobile, increasingly reliant on technology, unique and variable in their expectations, and value conscious. It wanted to provide them with a consistent experience at each location and be able to influence large numbers of guests quickly via social media.

It expected the underlying Enterprise Services Layer (ESL) of the DGE to support more than 20 million guests, 4 million daily transactions, and about 8,000 U.S. stores with 99.999% uptime. The system would support round-trip processing from any U.S. or Canadian store to the customer relationship management (CRM) system in less than 1 second. It would allow its marketers to make personalized offers based on customer preferences, purchase history, store product offering, time of day, weather, product promotions, and gamification experience.

The DGE uses point-of-sale integration, CRM technology, and digital offers coupled with mobile applications to achieve these goals.

7-Eleven realized that it would need new information systems to implement the DGE. The framework of requirements included providing:

- Integrated systems that can be easily reconfigured without a major implementation effort
- Integration based on a standard middleware platform
- A new repository of data shared and accessible by all DGE ESL components
- A private cloud environment based on a standard middleware foundation layer
- System flexibility to support growth and changes in business needs

Key goals established by 7-Eleven's IT group for the DGE platform included:

- Provide a single view of 7-Eleven to guests
- Produce a single view of the guest across 7-Eleven

- Create and unify digital channels
- Develop and manage digital products
- Provide data for analysis, insight, and action
- Build a platform for enterprise applications

After a selection process, 7-Eleven chose Oracle to provide the platform for its DGE for the following reasons:

- Oracle's solution fit within 7-Eleven's budget.
- Implementation by Oracle Consulting was expected to meet 7-Eleven's development timeline without mitigation.
- Oracle's solution was mature.
- Implementation was seen as mostly application configuration on engineered hardware with less complexity.
- Oracle provided strong references.

### ***Implementation***

Implementation started in April 2014 and required six to eight Oracle consultants over six months. The rollout eventually involved about 8,000 U.S. stores and 4 million customer transactions per day with a subsecond response time goal and short release cycle. It allowed 7-Eleven's IT group to dynamically provision infrastructure and middleware services on demand.

### ***Results/Benefits***

7-Eleven used the Oracle cloud middleware portfolio to:

- Develop, integrate, and secure mobile applications
- Drive real-time analysis, integration, and security of M2M data
- Provide middleware solutions that involve public, private, or hybrid cloud infrastructure and integration
- Drive productivity and engagement via multidevice, modern user experiences

7-Eleven's investment in the Oracle private cloud on top of the existing Oracle middleware layer yielded a variety of benefits, including:

- Significantly shortened development and rollout cycles (An initial test environment build took less than 15 minutes, current production build can be implemented in less than 30 minutes, future production builds covering more than 60 virtual servers will take less than 6 hours.)
- Provisioning new environments in less than 10 minutes, including the complete SOA Suite on WebLogic/Exalogic and Enterprise Manager managing the SOA Suite, WebLogic, Exalogic, and Exadata databases
- Comprehensive reporting for IT and business visibility

- Expected average response time of 300ms (actual response time was 29ms); round-trip from any North American store to CRM system is less than 1 second
- Overwhelming customer response that created the need to quickly double capacity; took 7-Eleven four days to production; scaled up unexpectedly from four to eight managed servers in live production without an outage
- Now processing more than 4 million transactions every day, with uptime at 99.999%

## CHALLENGES/OPPORTUNITIES

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Oracle has an excellent relationship with its customers, which have mostly standardized on the Java platform and Oracle Databases. Customers that use Java or Oracle Databases could quickly adopt Oracle's PaaS offerings and harvest value. Oracle needs to expand its capabilities to attract start-ups and allow them to build solutions using Oracle's PaaS.

Oracle has leading SaaS solutions with a large number of customers. While these solutions are closely tied to Oracle's PaaS offerings, Oracle needs to increase awareness so customers are knowledgeable about combining all aspects of cloud computing to gain much higher value.

PaaS has significant value in addressing the need for businesses to be agile, but customers are not very aware of its potential benefits. Oracle should clearly define the ease-of-use benefits of its PaaS offerings along with the ROI gained from reduced complexity compared with traditional approaches. Creating awareness around the benefits of PaaS will grow PaaS adoption within the Oracle user base and beyond.

## FUTURE OUTLOOK FOR PAAS

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Virtualization has brought an on-demand service model to IT consumption, providing customers with much better flexibility. It has also delivered significant improvements in scalability and reliability to the cloud delivery model. Further advances like containers will augment the benefits of PaaS by improving the efficiency of the underlying infrastructure.

IDC predicts that smartphones and tablets will generate 40% of all IT growth in 2015. At the same time, Internet of Things growth will be driven by the 30 billion devices projected by 2020. These changes will lead to both opportunities and challenges for businesses. PaaS-delivered mobile and data services will improve value to users through instant access to information, thus accelerating the adoption rate of cloud technology enabling organizations to be ready for digital transformation.

As businesses adapt to changes, the efficiency of the application development life cycle becomes critical to the ability of IT organizations to support these changes. PaaS solutions may become important competitive differentiators in helping businesses and their IT departments leverage the benefits of cloud technology.

## CONCLUSION

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Cloud adoption is growing rapidly and has evolved from application software delivered as a service to infrastructure delivered as a service. In parallel, mobile devices and applications and the emergence of open source development tools and resources have changed the landscape of IT development and operations, requiring a variety of new skills. As IT organizations strive to keep up with the changing IT landscape, they are also under continuous pressure to enhance the agility of the businesses they serve. PaaS delivers agility to both DevOps and the businesses that employ DevOps, allowing IT to adapt legacy applications and deliver new applications to emerging audiences and devices at an unprecedented pace.

Driven by customer change brought about by mobile device use and influenced by social media, 7-Eleven needed to quickly respond with new solutions, and it accomplished that goal by using the Oracle PaaS portfolio. 7-Eleven is an example of a traditional enterprise leveraging cloud-delivered services to transform its business model to meet dynamic customer expectations. The combination of a flexible infrastructure with a platform to abstract complexity enabled 7-Eleven to build a new solution and a development platform to quickly modify or develop new solutions to meet rapidly emerging market needs.

While announcing 2Q15 earnings, Oracle said there were 150 new PaaS customers in the quarter, excellent results for an offering that was available for only 60% of the quarter. IDC sees this as a result of Oracle Cloud and Oracle Private Cloud Solutions mapping well to the needs of the installed base. Oracle also has a large Java and database developer community (15+ million), with established developer programs that allow the ecosystem to leverage Oracle Cloud Solutions. The large and rapidly growing SaaS business creates demand for Oracle PaaS and IaaS to enrich these SaaS applications and connect them with other on-premise and cloud investments. Oracle is moving aggressively to keep its middleware and database platforms in the mainstream of a rapidly evolving technology base, and the company stands a good chance of capturing PaaS market share even though its offering is fairly young.

Enterprises need to consider the following broad guidelines while leveraging PaaS in their organization:

- **Understanding the solution needs:** Enterprises need to decide or optimize the trade-offs between time to market and solution cost. The PaaS product that offers the best time to market may not be the cheapest solution. It is important for enterprises to pick the right vendor that can deliver both reliable PaaS and reliable IaaS to deploy the resulting applications.
- **Choice of products:** Available organizational skills are important for implementation success. Picking mature, standards-based products with portability lowers risk when a vendor has a proven track record of success in providing mission-critical support.
- **Future change requirements:** Successful solution implementation is not always sufficient in satisfying a business need. The ability to quickly change functionality using automated infrastructure management as customer feedback is obtained is an important factor in choosing a PaaS platform. The ability of a solution to scale quickly while responding to unforeseen demands reduces risk and optimizes revenue both directly and indirectly through improved customer satisfaction.

## SOURCES

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<sup>1</sup> *IDC FutureScape: Worldwide Social Business Transformation 2015 Predictions* (IDC #252798, December 2014)

<sup>2</sup> IDC's 2H14 *CloudView Survey* (worldwide n = 3,463)

## About IDC

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