PIQUE SOLUTIONS

The Return on Investment with Oracle Management Cloud Services

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Pique Solutions is a competitive research and market analysis firm supporting Fortune-500 companies in the information technology sector. Pique is based in San Francisco, California.

Executive Summary

Oracle Management cloud services present a new approach to DevOps monitoring and IT Operations management and provide organizations with a more modern way to manage fast-changing environments. Companies interviewed for this study were involved in a wide range of activities, including:

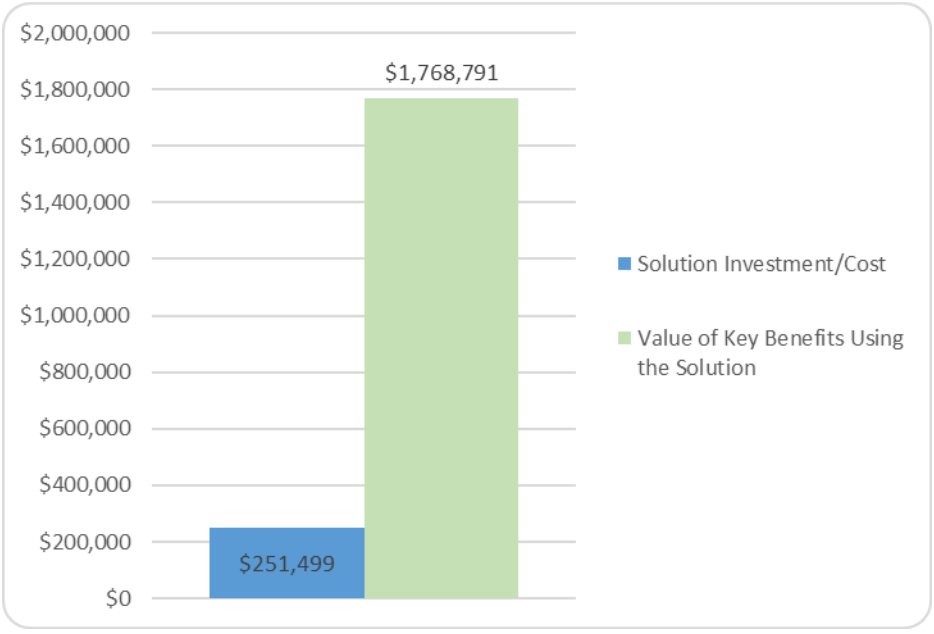
- New application development using cloud technologies.
- Application integration involving legacy systems and new application development.
- Monitoring and managing systems of record such as on-premises enterprise resource planning (ERP) systems.
- Migration of workloads to public cloud, private cloud, or other deployment choices.

Customers were particularly impressed with the unified data platform, automation, and machine learning, which dramatically reduced manual effort and ongoing customizations of the management suite.

Pique Solutions surveyed and interviewed a number of Oracle Management cloud services customers to determine how they were using the platform, the investment involved and, most importantly, the business value and cost-savings benefits they realized after using it over time. We then constructed a financial model based on data customers shared with us to provide a return-on-investment (ROI) profile.

Figure 1 presents a summary view of the three-year investment and combined cost savings and value resulting from capabilities as experienced by customers.

Figure 1. Three-Year ROI Summary



The key findings of the study were as follows:

- Based on a composite customer scenario, customers realized an over 6× ROI—603% over three years—with a positive net value stream of 430% for the initial year of investment, assisted by the subscription pricing model and no upfront costs.
- Customers realized a tangible benefit in retiring existing management systems and/or avoiding the cost of other "point" management solutions, each of which had its own substantial carrying costs. This benefit alone more than covered the cost of the solution deployment for many companies we talked to.

- The integrated nature of application performance monitoring, dynamic topology and entity relationship mapping, and log analytics both reduced the setup and administration investment and dramatically reduced the cost of issue tracking, management, and resolution.
- Customers cited machine-learning capability as a standout feature that changes the way IT approaches management. Customers told us that the solution can dramatically reduce the number of false alerts by automatically identifying the baselines for normal behavior and determining alert thresholds via data analytics. Furthermore, this learning happened very quickly, within the first one to two reporting cycles after implementing the solution.
- Customers found troubleshooting and issue resolution as one of the key operational benefits, with a range of up to an order of magnitude (10×) savings in the time required to diagnose and resolve IT issues. The primary driver is a single source of truth with all IT parties (e.g., systems and database administrators, application owners) having access to the same comprehensive set of data and analytic conclusions—such as identifying the root cause of performance issues and being able to drill down from application data to detailed log data in context.
- We also found the solution being leveraged by developer teams, identifying long-standing issues with legacy code base(s) and using performance data in real time to help them write higher-quality code. Study participants shared that this proactive approach had a dual impact of shortening dev-test cycles and identifying and resolving performance-related issues that would have made their way to production release were it not for these services.
- Finally, customers credit the solution for sustaining and improving their availability service-level agreements (SLAs). They also report that its customer- and executive-facing dashboards assist in effective communication of SLAs and KPI information in a self-service manner.

> "Troubleshooting is 10 times faster on an hourly basis for the more things that you have being monitored. The more you deploy, the bigger the multiplier. The more Oracle is able to see of the environment, the more it's able to leverage machine learning to understand the relationship between events in the environment for troubleshooting."
>
> **Enterprise Architect**
>
> Global Systems Integrator

Introduction

Customers we talked to described Oracle Management cloud services as a game changer in terms of DevOps monitoring and management.

This paper documents the value streams realized by customers and users of the solution, summarizing what companies can expect in terms of an ROI while also providing qualitative and anecdotal examples of the solution in use by companies around the world.

The study found three key areas of cost-savings benefits, as follows:

- Legacy management tool retirement/avoidance.
- Efficiency and productivity gains.
- Infrastructure optimization and growth enablement.

Relative to the benefits, our study also found the investment in to be very straightforward and modest in terms of license costs and monthly subscriptions to Oracle services based on the scope of management.

Customers also reported a number of other benefits that have been captured in this study. These include improving SLAs and the transparency of SLA reporting as well as improving the quality of applications delivered.

Study Approach

The primary research phase consisted of an in-depth data collection and interview process. Pique identified and qualified 11 customers and partners involved in implementations inside medium and large organizations. These experts provided detailed primary research and data focused on the investment and value after implementing and using Oracle Management cloud services.

The research process and methods were as follows:

- Reviewed publicly available information and secondary research on cloud application development trends, drivers of adoption, use cases, and key value drivers.
- Identified and qualified 11 customer interviewees who participated in multiphase, in-depth interviews and data gathering on each of the investment and benefit areas.
- Synthesized data and research findings.
- Developed a value model and analysis summarizing study results.

Table 1 lists the companies analyzed and interviewed in the data-gathering phase of the research project.

Table 1. Companies and Participant Roles Included in Primary Research

Company	Region	Title
Financial Services Firm	North America	Director of IT
Investment Management Firm	North America	Application Owner
Global Risk, Retirement, and Health Services	Global	Executive Director, Technology
Systems Integrator	North America	VP, Practice Lead
IT Services Firm	Asia Pacific	Technology Lead
Telecommunications Provider	Asia Pacific	Deployment Architect
IT Consultancy	North America	Principal Consultant
Systems Integrator	Europe	Practice Lead
Investment Management Firm	Asia Pacific	IT Operations Lead
Logistics Firm	Asia Pacific	IT Director
Systems Integrator	Global	Enterprise Architect

Oracle Solution Overview

Oracle Management cloud services provide a variety of IT monitoring, management, and analytics capabilities for managing both Oracle and non-Oracle applications, systems, and infrastructure.

In this section we present a summary and brief description of the service line items in the scope of Oracle Management cloud services:

- **Application Performance Monitoring:** Provides real-user experience monitoring, synthetic monitoring, and application performance monitoring to help development and operations teams identify and resolve application issues in on-premises and cloud environments.
- **Database monitoring and Management:** Provides complete visibility, deep diagnostics and repair controls for databases deployed in the cloud and on-premises including Oracle Autonomous Database, Oracle Databases on Oracle Cloud Infrastructure, Oracle Exadata Cloud@Customer, Oracle Exadata on-premises and other databases deployed in customer data centers.
- **Infrastructure Monitoring:** Monitors the status and health of the broader IT infrastructure that supports a company's applications. Working in unison, infrastructure monitoring and application performance monitoring enable administrators to proactively monitor across tiers, troubleshoot, and resolve issues faster to prevent impacting end users.
- **Logging Analytics:** Monitors, aggregates, indexes, and analyzes all log data from customer applications and infrastructure, allowing administrators and users to search, explore, and correlate this data to troubleshoot issues, derive operational insight, and make decisions.
- **IT Analytics and Operations Insights:** Provides insight into the capacity and performance of databases and infrastructure investments enabling line-of-business and IT executives, analysts, and administrators to make decisions about their IT estate.

The key architectural consideration of these components is that they all share the same data model, and the data gathered by each is stored in the same unified platform that leverages appropriate subsets of the data to uniquely support various functions.

Each of these functional components has a distinct set of value streams. For example, our study found that most small and medium companies start with application performance monitoring and log analytics and then look to layer in other elements to augment and add value over time. The core value of integrated application performance monitoring and log analytics is a key foundational pillar of our value analysis.

The Value and ROI

Now, with the context of the Oracle solution portfolio, we synthesize our primary and secondary research to discuss the value drivers and compare the results of that financial analysis to the investment made to determine the ROI.

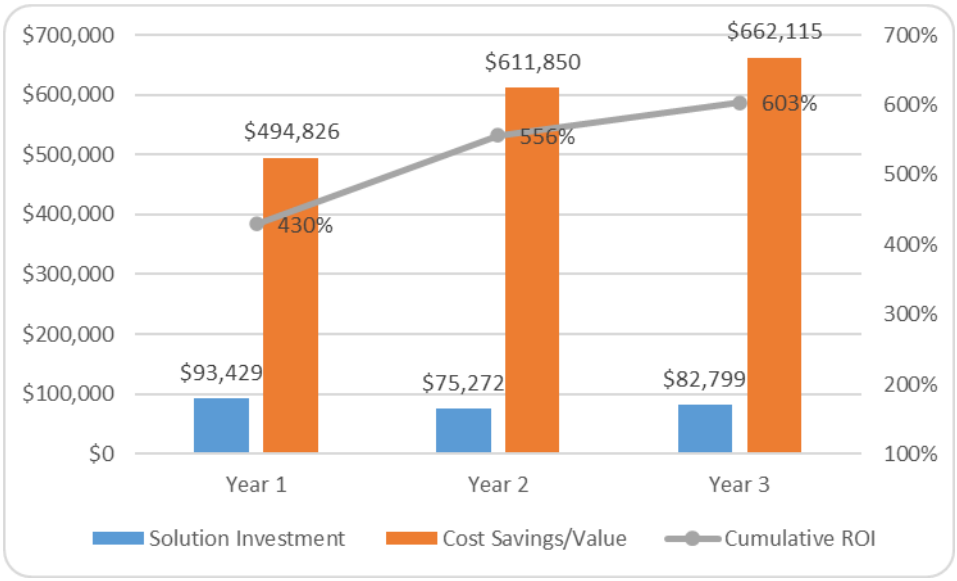
Composite Profile and ROI Model

Our research consisted of a significant number of customers and implementation partners who provided insights and data for dozens of deployments, ranging from a modest-sized scope of just a few applications and servers to those managing hundreds of servers with application user bases measured in thousands. For our financial analysis, we used a median deployment scenario based on the following customer parameters:

- **Deployment Scope:** Application and database performance management and log analytics.
- **Number of Applications Managed:** 4 (mix of internal enterprise apps and apps accessible to external customers).
- **Scope of Coverage:** 24/7.
- **Number of Entities Managed:** 350.
- **Environment Growth:** 10% per annum.
- **Daily Log Volume Ingested:** 30 GB.
- **Number of Management Staff:** 9 (4 admins and 5 IT/business analysts).
- **Number of Developers:** 45.

Based on this data, we constructed a model to calculate the investment and associated benefits realized upon the deployment of the solution using mean values provided by interview participants. The summary three-year analysis is presented in **Figure 2**, demonstrating the ROI is 603% including a breakeven in the first few months after implementation. The primary reason for the substantial ROI is a combination of both an affordable pay-as-you-go, subscription-based solution offering and capabilities that drive numerous line items of tangible cost savings. The value increases each year with growth in the environment and the ability to scale without adding staffing combined with optimizing compute and other infrastructure resources.

Figure 2. Three-Year ROI Summary



Eliminated/Avoided Costs of third-party Management Systems

Most customers had a pre-existing and, in many cases, several management capabilities in their IT environment that they were able to retire after successfully implementing the Oracle solution. In other cases, customers were evaluating other vendor solutions and were able to avoid the cost of those solutions. In either case, Oracle Management cloud services were deemed by our study participants as superior solutions that provided greater coverage for a wide variety of on-premises and cloud applications and systems. The solution also supported the management of both Oracle and non-Oracle systems.

The tangible savings typically manifested in the elimination of support or service fees for the legacy management application or the net difference in what it would have cost to extend the legacy licensing or purchase a net new alternative.

An Asian financial services company who participated in our study reported that they saved $300K annually by replacing their existing management solution to manage 22 internal and external-facing applications. This savings was a combination of vendor support and maintenance fees and the cost of staffing resources to manage and administer the management system on-premises. The operations lead shared, “Oracle does all the ‘management’ so there is much less involvement by the customer.” He went on to say that another key benefit is that it extends management beyond just Oracle applications and systems. He pointed out the capability to manage heterogeneous apps and systems in a single dashboard, even Microsoft apps and MongoDB.

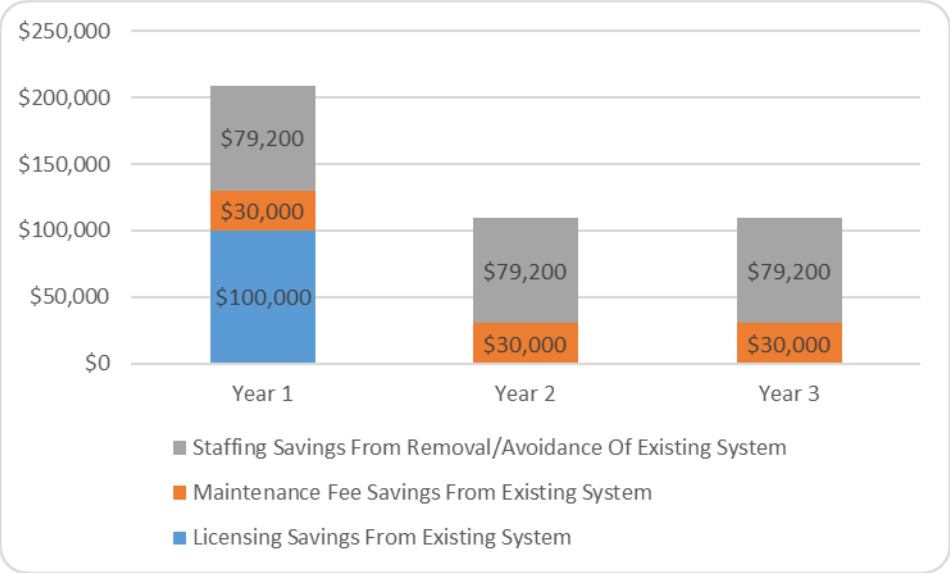
A global systems integrator also touted the solution as providing a unified set of services that removed the expense and need for other solutions that only address portions of the management spectrum. The enterprise architect reported, “We felt that Oracle was the only solution able to provide a consolidated view of all of our systems as well as log analytics, performance monitoring, and other features. The solution replaced ELK and Nagios for our cloud-based deployments. The amount of effort and cost were reduced dramatically.”

> “We had considered Splunk but chose Oracle because of the lower investment in cost and time.”
>
> **IT Operations Lead**
>
> Asian Investment Management Firm

Another study participant, representing an Asian investment management firm, evaluated Splunk as a potential solution before ultimately choosing Oracle. As explained by the IT operations lead, “We had considered Splunk but chose Oracle because of the lower investment in cost and time.” He also noted that another factor involved in the decision was the fact that Splunk would require an additional third-party tool for application performance monitoring because this service element is not provided by Splunk.

Figure 3 illustrates the common scenario shared by our study participants citing the avoidance of cost relative to another key expenditure. This cost savings includes several components, including a license avoidance ($100K one-time reduction), maintenance/support fee elimination ($30K per year), and a staff savings ($79K per year) associated with the management and administration of the management platform itself.

Figure 3. Savings/Avoided Cost



Efficiency and Productivity Gains

Another common and consistent benefit cited unanimously by all the customers we spoke with was the level of efficiency gains in key and previously time-consuming activities associated with traditional IT management—namely, issue troubleshooting and resolution, resource utilization monitoring and capacity planning, and increasingly leveraging effective monitoring data in the application development and testing life cycle.

Troubleshooting and Resolving Issues: Perhaps the most common benefit for customers we spoke with was the dramatic reduction in the time to identify, pinpoint, and resolve issues, particularly in multitier application environments. A director of IT for an Asian logistics company shared his experience with the powerful combination of performance monitoring and log analytics. Using application performance monitoring, they are gathering information on their ERP users' experience, performance of the middle tier as well as database connections, and SQL performance all viewed on a single screen.

Log analytics gives them the view of where there are any errors happening with app servers and database servers. The director of IT explained, "That's where the value comes from. We are able to drill down to a particular point in time, and then with log analytics we are able to see a wholesome view of what was happening at that point in time with respect to a particular dimension. With log analytics, we can very easily look at different types of errors and automatically cluster them together. Instead of somebody having to go through each log file manually, now we have this tool that can summarize the data and then present it in a graphical way. So, it becomes easier to understand that whole problem in totality."

He went on to say, "Earlier, this was opaque to us since there were loads and loads of error logs or application logs. One had to scan through logs for hours or days to figure out the problem. Now it's become really easy—instead of days now we are able to figure it out within minutes or an hour or two at the most and resolve it. The Root Cause and MTTR, that's where the largest benefit has been. Now we resolve issues much faster as compared to what we were doing before."

In terms of quantifying the cost impact related to this capability, the director of IT deemed that he would need to add 1.5 full-time equivalent resources to conduct the troubleshooting activities.

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> **Director of IT**
>
> Asian Logistics Firm

A global systems integrator also cited the troubleshooting and resolution capabilities and, in particular, the machine-learning capabilities associated with multiple data sources. The enterprise architect explained, "Oracle Management cloud services is a solution that, out of the box, takes data from so many different data points and automatically learns. And lets you sift through it so much faster than you could before and find problems you have never found before. Troubleshooting is 10 times faster on an hourly basis for the things that you have being monitored. The more you deploy, the bigger the multiplier."

Another research participant was a deployment architect who deployed the solution for an Asian broadband company. They again cited the reduction in root cause analysis as the key benefit realized. Prior to the solution, it took as long as 24 hours to identify, pinpoint, and resolve system issues. Suffice to say, this was a huge pain point for them, and when these issues occurred a total of four resources were deeply involved in each issue through to resolution. Now, they shared that the root cause analysis time has been reduced to 1 hour, down from 24.

Reduction in the Number of False Positives: Customers shared another key benefit in terms of the accuracy in the identification and alerting of issues, reducing the number of false positives reported, and hence eliminating the time-intensive cycles of tracking an issue only to find out that it was never an issue in the first place.

Reduction in Development Time via Access to Application Performance Data: By using data to monitor and track performance data in the development and testing process, many companies are realizing value in accelerating the application development cycle. The bottom line is less effort and time expended by developers for each release.

A European technology services provider achieved 4× acceleration in the time to test and migrate applications developed for business transformation by using application performance monitoring and log analytics to verify the stability of servers, performance of databases, and smooth running of proof of concepts and cloud projects.. In addition, they were able to solidify adherence to SLAs by ensuring 99.99% availability of Oracle systems and 30-minute maximum resolution time, all due to the ability to anticipate and rectify decreases in performance, that enabled partners to test applications and proof of concepts at full throttle with simulated workloads in stress test mode at maximum performance. Prior to this, resolution time ranged from 3 to 6 hours, and after implementation it ranged from a matter of minutes to a maximum of 30 minutes.

Another investment fund platform provider found positive impact on their development cycle. As they launched new business initiatives while managing the heightened complexity of working across more global jurisdictions, they began to see the development cycles for their applications taking longer each month. As a result of implementing the solution and effectively using the data on application performance, they were able to reduce development times by 25% by empowering developers to monitor application performance and scalability in real time throughout the DevOps cycle and prior to going into production. According to the IT operations lead, "Oracle Management cloud services have given us a competitive advantage as our developers have greater speed, efficiency, and control over the new releases to customers."

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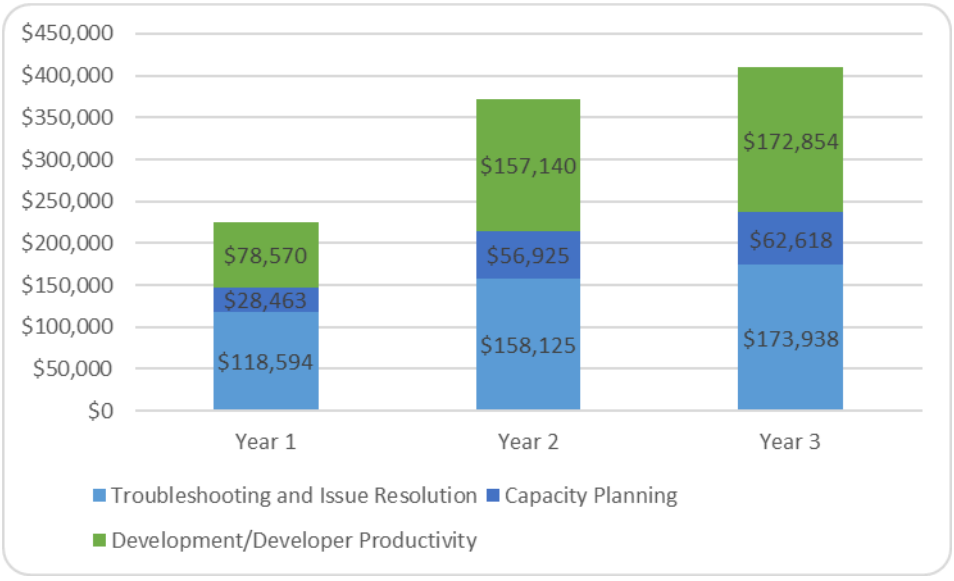
Figure 4 presents the savings associated with critical IT management and development activities. The troubleshooting and resource/capacity planning savings elements are based on an administration team of five, including a manager and four administrators/application owners, and represent the additional cost that would be incurred without the capability. The first-year savings for these two items, $119K and $28K, respectively, was factored down based on the implementation and operational change time for the benefits to be fully realized. In year two, the savings for troubleshooting and issue resolution increases to $158K and $57K for capacity planning activities and then grows in year three based on the 10% growth in the customer environment.

Figure 4. Efficiency and Productivity Savings



For developer productivity, the savings are based on a team of 45 developers in the organization saving on average 10% of their time in the testing phase of the development life cycle, obviously excluding activities such as planning and physically writing code. The savings equates to $79K in the first year due to benefits being realized in the second half of the year and then increase to $157K in year two and growing to $173K in year three along with growth in the environment.

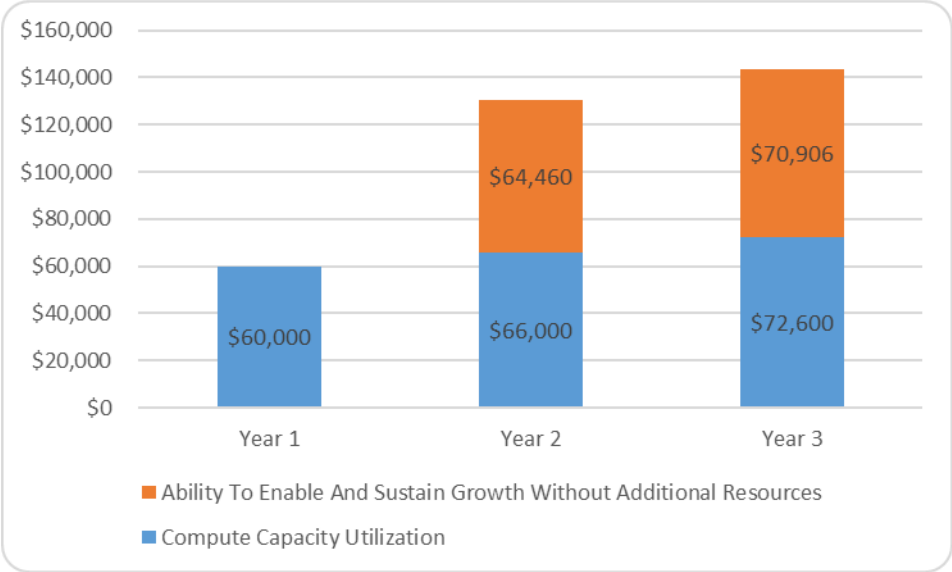
Enabling Growth and Scale

Another key tangible benefit of effective IT management and tooling is the ability to support growth in the underlying environment without adding administrative resources to support the growth or scale. Customers interviewed articulated this benefit and the tangible cost savings associated with it over time.

Another important aspect of the savings stems from the resource utilization and capacity planning capabilities and the ability to track historical trending on utilization and system metrics to right size and reallocate underutilized resources. Oracle provides IT managers with granular data on average and peak loads on systems and servers, so they are able to allocate processing power where it is needed and eliminate the need to guestimate server sizing.

Figure 5 captures these savings elements as realized by customers we interviewed and surveyed. The capacity utilization is based on a 20% savings in resource and server expenditure and the optimization afforded by the Oracle solution. In the first year, this equates to $60K and grows each subsequent year with a 10% environment growth factor. The second savings element is related to the ability for customer IT administrators and operations teams to "take on" additional growth in infrastructure and application portfolio without the need to add incremental staffing as the business grows. This benefit starts in the second year in the amount of $64K and grows to $71K in year three.

Figure 5. Scale and Growth Enablement Savings



Additional Business Benefits Noted

Our research also uncovered additional relevant and tangible benefits that customers identified as more difficult to quantify in the context of a value stream. They are likely leading indicators for improvements in quality of software and SLA attainment.

Software Quality

A primary benefit is the improvement in application quality through analyzing the performance of applications and helping to enforce best practices in writing high-quality code.

The Asian logistics company provided a very compelling example of this, wherein they brought in Oracle to diagnose some nagging serious issues with a homegrown ERP application. Upon implementation, the underlying and longstanding issues were immediately identified and corrected, and going forward, the company used the Oracle solution to assist in the development process to help the teams develop better code. The director of IT shared, "Developers are able to resolve any issues with the code or the app performance very early on, so they don't cascade. This has instilled a new culture of best practices within the development team. Each time we identify an issue, the resolution process is documented into the best practices manual."

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> **Director of IT**
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> Asian Logistics Firm

Availability, SLAs, and Uptime

Improved SLA Attainment

A U.S. IT consultancy focused on managed service offerings of Peoplesoft ERP systems for primarily public sector customers shared with us their primary benefit of using the Oracle solution to report SLA information. The ability to provide their customers with executive-level dashboards demonstrating the historical performance of applications was of significant value for them. The principal consultant explained, "We use the solution very heavily to make sure that our customers who are hosted on our private cloud have the proper reports that show we are meeting the SLAs. Not only is Oracle application performance monitoring an online real-time tool, but it also aggregates history and we can easily make it available via a customer-facing dashboard."

An Asian systems integrator chose the solution to enable and sustain SLAs for their customers. After implementing the solution, they achieved 100% SLA attainment for 18 months straight. As explained by the practice lead, "Our primary use case was to ensure better service delivery. After 18 months we managed to stay within SLA 100%—the number of SLA breaches equals zero."

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>
> **Principal Consultant**
>
> U.S. IT Consultancy

Improved Performance Results and Better End-User Experience (Fewer Reported Issues)

A key outcome found by many of our study participants was improved application performance and the ability to proactively identify potential application issues before they manifested into the user experience. The Asian financial services company found that the Oracle solution can provide early warnings about application issues, giving them time to take action before problems arise. Before, they would only know about a problem when the application went down, and this caused problems with SLAs. Now, they have improved availability and performance by reducing the number of downtime incidents. According to the IT operations lead, "With Oracle, we've reduced the number of incidents with apps by 50%."

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Conclusion

Oracle Management cloud services represent a significant enhancement in capability when it comes to managing IT. The cloud services in this family offer customers a series of cost savings and value streams, many of which individually offer a payback on the modest investment in this advanced cloud-based management service.

This study found that customers can expect to achieve up to a more than 6× ROI—603% over three years. Specific benefits contributing to this ROI were:

- A $428K savings over three years on cost elimination and avoidance of legacy management platforms or multivendor solutions.
- More than $1M in savings over three years in productivity and efficiency from dramatically faster troubleshooting, issue resolution, capacity planning, and improvements in the development and testing of applications.
- A total of $334K in scale and growth enablement savings due to compute capacity optimization and the ability to enable and sustain growth without adding resources.

The study also revealed additional benefits that we also attribute to the high ROI:

- Faster time to market with shorter development cycles.
- Higher-quality applications through identification of issues during development and testing.
- Improved customer satisfaction and self-service.

> "The beauty of Oracle is with the machine-learning capabilities it saves so much time for clients. Not just for operations and management work, but it also saves a ton of time for them for development or for understanding what's going on with their systems and how people are using the systems."
>
> **Enterprise Architect**
>
> U.S. Systems Integrator

Customers interviewed and surveyed in our study widely touted the benefits to their businesses and, in many cases, their customers whom they service. Several of the study participants were in fact integration and technology providers that both used the solution for their own operations and implemented it on behalf of their extended customer base.