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The Total Economic Impact™ Of Oracle Enterprise Manager Configuration Management Pack, And Provisioning And Patch Automation Pack

Multicustomer Analysis

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Executive Summary

In March 2009, Forrester Consulting initiated work on a research project commissioned by Oracle Corporation that focused on examining the potential return on investment (ROI) that enterprises may realize by adopting Oracle Enterprise Manager. This study specifically examines the benefits of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack (collectively referred to as “Packs”) for managing databases, middleware, and applications, as well as hardware and operating systems.

This study highlights the benefits and costs of deploying these Packs across the enterprise of a sample *Organization* (see description of sample *Organization* starting on page 9. The findings in this study are, in a large part, based on in-depth interviews conducted with six organizations currently using the Packs. The study examines the estimated ROI for the sample *Organization* and presents the aggregate findings derived from the interviews and analysis process as well as Forrester’s independent research.

The study found that for the sample *Organization*, the Packs provided benefits and savings in the following areas:

- Reduction in ongoing costs of managing IT configurations, compliance, patching, and provisioning.
- Increased administrator and IT operations staff productivity through standardization of “golden” configuration standards, and by replacing error-prone manual tasks with automation.
- Increased response to business needs and ability to scale environment through automated mass deployment.
- A 20% reduction (over three years) in capital spending on servers monitored by Oracle Enterprise Manager.

This sample *Organization* achieved a risk-adjusted and a **very favorable 124% ROI** (130% non-risk-adjusted ROI) over a three-year period with a **risk-adjusted payback period of 15 months** (14 months non-risk-adjusted).

Purpose

The purpose of this study is to provide readers with a framework to evaluate the potential financial impact of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack. Forrester’s aim is to clearly show all calculations and assumptions that go into the analysis. This study should be seen as a guide to better understand and evaluate Oracle Enterprise Manager Configuration Management Pack and Provisioning and Patch Automation Pack.

Methodology

Oracle selected Forrester for this project because of our expertise in enterprise IT management technologies and Forrester’s Total Economic Impact™ (TEI) analysis methodology. TEI not only measures costs and benefits (areas that are typically accounted for within IT); it also weighs the enabling value of a technology in increasing the effectiveness of overall business processes.

Forrester employed three fundamental elements of TEI (see Appendix A) in this study:

- Cost and cost reduction.
- Benefits and savings to the entire organization.
- Risk.

Given the increasing sophistication that enterprises have regarding cost analyses related to IT investments, the TEI methodology serves an extremely useful purpose by providing a complete picture of the total economic impact of purchase decisions.

Approach

Forrester used a four-step approach for this study:

1. Forrester interviewed Oracle marketing and product management employees to fully understand the value proposition of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack.
2. Using knowledge of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack, as well as input from existing Forrester research and Oracle, a Forrester representative conducted in-depth discussions with six of Oracle's customers regarding their experiences with Oracle solutions.
3. Forrester constructed a financial value model representative of the data collected in the interviews.
4. Forrester created this study, which represents and examines the estimated value of the findings derived from the customer interview and analysis process and from Forrester's independent research.

About Oracle Enterprise Manager

Oracle Enterprise Manager is Oracle's solution for managing IT applications running on Oracle's enterprise application stack, which spans Oracle packaged applications, Oracle Fusion Middleware, Oracle Database, Oracle Enterprise Linux, and Oracle VM. Oracle Enterprise Manager employs a top-down approach to application management, enabling customers to reduce IT costs while increasing the quality of services delivered with its enterprise applications.

Oracle Enterprise Manager provides the following capabilities:

- **Application performance management.** Provides a broad range of capabilities including user experience monitoring; model-based monitoring for all middleware components, database monitoring combined with cross-tier diagnostics, and automated remediation of performance issues.
- **Configuration management, provisioning, and patching.** Provides capabilities including automatic IT asset discovery, real-time change detection, risk mitigation for IT configurations, and IT compliance automation, in addition to automated provisioning of systems and patches for Oracle and non-Oracle technologies.
- **Application quality management.** Provides a set of solutions for testing applications including accelerated testing solutions for Oracle packaged applications; Web-based and

SOA application testing; Oracle Database testing solutions, using real production workloads, and secure data sharing;

For more information on Oracle Enterprise Manager, visit oracle.com/enterprisemanager.

Key Findings

Forrester's interviews and research show that the Packs provide significant value to organizations. There were several common benefits cited by the six interviewed organizations that are described briefly below, and in more detail in the "Benefits And Savings" section of this study (page 12).

From these common value statements, Forrester was able to generate a potential ROI for a sample *Organization*. The objective was to illustrate how the common benefit and cost estimates can be applied to other organizations considering the purchase of Oracle Enterprise Manager.

As stated above, for our sample *Organization*, the Packs provided benefits and savings in the following areas:

- Reduction in ongoing costs of managing IT configurations, compliance, patching, and provisioning.
- Increased administrator and IT operations staff productivity through standardization of "golden" configuration standards, and by replacing error-prone manual tasks with automation.
- Increased response to business needs and ability to scale environment through automated mass deployment.
- A 20% reduction (over three years) in capital spending on servers monitored by Oracle Enterprise Manager.

This sample *Organization* is using the Packs and achieved a **very favorable 124% ROI** (risk-adjusted) over a three-year period with a **payback period of 15 months**. On a non-risk-adjusted basis, the sample *Organization* achieved a system 130% ROI over a three-year period with a payback period of 14 months.

Table 1 shows a three-year summary of the ROI, payback period, net present value (NPV), costs, and risk-adjusted benefits for our sample *Organization*.

Table 1: Three-Year Summary Financial Results — Sample Organization (Risk-Adjusted)

Summary financial results	Original estimate	Risk-adjusted
ROI	130%	124%
Payback period (months)	14	15
Total costs (PV)	(\$1,784,832)	(\$1,784,832)
Total benefits (PV)	\$4,106,273	\$3,991,180
Total (NPV)	\$2,321,442	\$2,206,349

* Forrester used a discount rate of 10% to calculate PV and NPV.

Source: Forrester Research, Inc.

The three-year total risk-adjusted net present value (NPV) of **\$2,206,349** represents the incremental net cost savings and benefits attributed to successfully implementing and using the Packs.

Prior to implementation, the sample *Organization* was experiencing and trying to remedy the following historical issues:

- Inability to track and maintain system configurations.
- Difficulty in following mandated security and compliance standards.
- System errors and downtime as a result of applying incorrect software patches and updates.
- Inability to perform root-cause analysis on system failures.
- Inefficient use of administrator resources when executing planned and unplanned system management events.

Cost and benefits details are provided below in the “Costs, Benefits, And Risk” section (page 11).

A risk-adjusted ROI that demonstrates a compelling business case raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers, because they represent the expected value considering risk, should thus be taken as “realistic” expectations. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

The objective of this study is to illustrate the savings and benefits that the sample *Organization* realized from deploying the Packs. The results can guide other organizations' expectations with respect to the savings and benefits that might be realized in their particular business environments.

Disclosures

The reader should be aware of the following disclosures associated with this study:

- The study was commissioned by Oracle and delivered by the Forrester Consulting group.
- Oracle reviewed and provided feedback to Forrester, but Forrester maintained editorial control over the study, its findings, and the financial data. Forrester did not accept any changes to the study that contradicted its findings, obscured the meaning of the study, or changed any of the data collected.
- The customer names for the interviews were provided by Oracle.
- Forrester makes no assumptions as to the potential ROI other enterprises will receive within their own environments. Forrester strongly advises that the reader use his or her own estimates within the framework provided in the study to determine the appropriateness of implementing the Oracle solution.
- This study is not an endorsement by Forrester of Oracle or its offerings.
- The study is not a competitive product analysis.

Organization Interview Highlights

Forrester's conclusions were derived in large part from information received in a series of in-depth interviews with executives and personnel at six organizations that were carefully selected to represent a broad range of industries, geographies, and size. These organizations are current users of the Packs. The following is a brief description of each of the interviewed organizations:

1. A European-based international bank and financial services firm with more than €500 billion in assets. The firm's dedicated Oracle department of 40 administrators manages more than 600 databases and has been using Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack for 18 months.
2. An international scientific research consortium that has been using Oracle Enterprise Manager Configuration Management Pack for two years and Oracle Enterprise Manager Provisioning and Patch Automation Pack for four years. Fifteen administrators regularly use Oracle Enterprise Manager.
3. A European manufacturing firm with locations in 52 countries. The firm has been using Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack for 12 months to manage 300 systems.
4. A motor vehicle rental firm with extensive operations in Europe and North America. The firm has been using the Packs for more than three years to manage more than 300 database and middleware systems.
5. An economic and banking regulatory agency that has been using Oracle Enterprise Manager Provisioning and Patch Automation Pack for more than a year to manage 170 databases and middleware systems.
6. A university-based, government-funded research facility that has been using the Packs for 18 months to help manage its hardware, operating systems, databases, and middleware that reside on 72 systems, as well as various storage subsystems and load-balancing appliances.

Common Objectives And Challenges Solved By Oracle Enterprise Manager

The customers Forrester interviewed had several common high-level business objectives, as well as tactical problems or issues that they were hoping to address and solve by investing in Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack. These objectives and challenges are shared by this study's sample *Organization* (see sample *Organization* description below, on page 9).

Common high-level business objectives or strategies included:

- Reduce the ongoing costs of managing IT configurations, compliance, patching, and provisioning.
- Improve administrator productivity to keep pace with business growth by replacing error-prone manual tasks with automation.
- Establish baseline or "gold" configurations in order to reduce configuration drift, simplify systems management, and reduce unplanned outages.

- Free up administrators' time to perform more value-added advisory and strategic services (beyond installing, tuning, patching, and upgrading databases). These value-added services include: addressing security issues and capacity planning.
- Adhere to security and compliance standards and quickly produce appropriate audit reports.
- Implement processes to reduce errors in and the effort required to apply critical and noncritical software patches.
- Have a centralized platform to proactively monitor alerts for databases/systems and servers/clusters 24x7 so problems can be resolved quickly.
- Ensure high availability of mission-critical applications to internal and external users.
- Reduce capital spending in the area of servers and associated maintenance.

Common tactical problems or issues included:

- Correcting a governance issue with too many custom scripts being created by all the administrators. The organizations wanted to standardize practices and reduce the possibility of human error in these scripts.
- Conducting IT asset tracking and discovery of major components such as operating systems, hardware, databases, middleware, and applications within their environments.
- Managing unplanned downtime due to unauthorized configuration changes in their critical business applications, which affected business end user productivity.
- Preparing for regulatory and compliance audits using time-consuming manual scripts, processes, and spreadsheets to track configuration changes and critical patch levels. Current manual processes remove key IT staff from day-to-day operational tasks and business-critical projects.
- Difficulty maintaining a system for managing "gold" standards for deploying new servers and software.
- Dealing with unpredictable demands from the business for rolling out new services while maintaining and ensuring compliance to corporate governance practices and standards.
- Too many human errors in the software patching process, which resulted in configuration inconsistencies and system downtime.
- Reduce the time and effort needed to provision new systems in order to meet end user service-level agreements.

Sample Organization

Forrester examined the costs and benefits of Oracle Enterprise Manager by conducting in-depth interviews with six Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack customers. The resulting data, along with Forrester's independent research, generated a baseline to determine the potential ROI for organizations contemplating their own deployment of these solutions. Forrester's sample *Organization* below has similar costs, benefits, goals, and objectives as the six companies that were interviewed. The purpose of the sample *Organization* is to show the potential ROI.

Description Of The Sample Organization

With revenue of just over \$2 billion, this global enterprise has 150 production databases and 25 mission-critical business applications running its supply chain, CRM system, finance, HR, and partner exchange portal. The organization also has an eCommerce Web site that allows customers to order and track online purchases. The enterprise has more than 200 CPUs with one major data center, three regional data centers, and more than 40 worldwide branch offices. This organization participates in both the commercial and consumer markets selling a broad range of durable goods and services.

Prior to implementing Oracle Enterprise Manager, the *Organization* was experiencing a rapid rate of business change and slowing IT response to business requirements. Management considered its IT operational costs too high, while its IT budget remained relatively flat year-over-year. The organization experienced difficulty achieving service levels due to unauthorized system changes, configuration inconsistencies, and discrepancies in systemwide patching. The company's ability to commission new systems in response to business needs for new IT services and processes suffered, creating obstacles for the company's growth. The *Organization's* specific challenges were:

- Decreasing the operational overhead and time needed to manage their IT environment and provisioning of new services. Business growth demanded rapid deployment of new systems, and manual deployment processes were too lengthy and costly.
- Tracking and maintaining system configurations was a lengthy and error-prone process. Configuration errors were causing system downtime, which affected the business.
- An inability to meet reporting deadlines for security and compliance audits, which stemmed from the manual processes used to track software patch applications and configuration changes. The IT organization was facing increasing pressure to meet security and compliance standards.
- Difficulty in identifying which systems needed patching. The process of determining which systems needed patch updates took too long, and systems would change during the discovery process. This would result in incorrect patches being applied, which caused system downtime.
- Inability to perform root-cause analysis for system failure, because it was too difficult to determine system configurations changes.
- Flat IT budgets required the company to maximize hardware and software resource utilization. Poor asset tracking capabilities were making it difficult to determine which assets the *Organization* owned and utilized.
- An overall IT goal to implement ITIL management processes.

Critical success factors and high-level business objectives or strategies that the sample *Organization* hopes to achieve by implementing Oracle Enterprise Manager include:

- Reduce the frequency and recovery time for unplanned outages that may result from configuration errors and incorrectly applied patches.
- Track system configurations and configuration drift with goal of achieving standardized configuration.
- Accurately maintain hardware and software inventories.
- Reduce database administrator labor effort associated with planned events like software patch updates and provisioning new systems.
- Enforce and maintain security and compliance standards.
- Reduce human errors in the patching and provisioning processes.

The CIO for this *Organization* is in charge of the adoption of IT technologies that support business process automation — a requirement from the *Organization's* line-of-business managers. This has resulted in the increased adoption of packaged and custom-built applications that take advantage of modern technologies such as SOA, grid computing, and virtualization. For the sample *Organization*, it has become increasingly critical to effectively manage such applications and its underlying infrastructure. The *Organization* chose Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack to help with the challenges associated with maintain its operating systems, databases, middleware, and applications. The ultimate goal of this sample *Organization* is to ensure the health of business applications that drive revenue.

An investment in Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack includes the following costs (see the “Costs, Benefits, And Risk” section for quantification of the costs):

- Internal planning for the implementation of Oracle Enterprise Manager.
- Two servers to host Oracle Enterprise Manager.
- Oracle Enterprise Manager Configuration Management Pack software licenses and Oracle Enterprise Manager Provisioning and Patch Automation Pack licenses.
- Ongoing Oracle Software Update License and Support for both Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack.
- Ongoing administrator time to maintain Oracle Enterprise Manager.
- Oracle Enterprise Manager training (Oracle Database 10g Administration Workshop and Oracle Enterprise Manager Grid Control 10g Workshop).

Costs, Benefits, And Risk

Costs

Costs and cost reduction are important parts of the TEI model. Costs are calculated as a change in costs primarily to IT as a result of the introduction of the technology to the *Organization*. Therefore, the introduction of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack affects IT budgets both negatively (with the implementation and purchase of the solution) and positively (in terms of cost savings and efficiencies created both in IT and in the business).

The sample *Organization* incurred costs in the following categories: one-time costs related to internal planning of Oracle Enterprise Manager implementation; two servers and software license costs associated with Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack; annual software support and maintenance costs; and Oracle training costs. These costs totaled **\$1,918,250** over the three years of this study. Fully burdened costs for servers, training, planning, and maintenance are used.

Cost Details

- Planning (time/effort) to implement Oracle Enterprise Manager: **\$31,250** — 500 hours at \$130,000 annual cost per full-time equivalent (FTE).
- Two servers to host Oracle Enterprise Manager: **\$39,000** — initial hardware costs, plus \$3,000 in annual support costs.
- License cost for Oracle Enterprise Manager Provisioning and Patch Automation Pack: **\$525,000** — \$2,625 per each of the 200 CPUs
 - Support costs: \$346,500 (\$115,500 annually) — 22% of license costs, or \$577.50 per CPU.
- License cost for Oracle Enterprise Manager Configuration Management Pack: **\$525,000** — \$2,625 per each of the 200 CPUs.
 - Support costs: \$346,500 (\$115,500 annually) — 22% of license costs, or \$577.50 per CPU.
- Training costs: **\$27,000** — \$3,000 each for four administrators to attend Oracle Database 10g Administration Workshop, and \$3,750 to attend Oracle Enterprise Manager 10g Grid Control Workshop.
- Administrator effort to maintain Oracle Enterprise Manager: **\$78,800**— 20% of one administrator's time annually at \$130,000 annual cost per full-time equivalent (FTE).

The financial results in this study assume that the sample *Organization* purchased and deployed the Oracle Enterprise Manager Configuration Management Pack, and Oracle Enterprise Manager Provisioning and Patch Automation Pack at a normal discount from Oracle as of March 2009. Other organizations may incur different prices; therefore, they should contact their Oracle sales representative or the Oracle Store <http://oraclestore.oracle.com>. Forrester makes no assumption that other organizations will achieve similar results as those cited in the study.

Table 2: Incremental Costs Associated With Implementing Oracle Enterprise Manager Configuration Management Pack And Oracle Enterprise Manager Provisioning And Patch Automation Pack (Risk-Adjusted)

Projected costs	Initial	Year 1	Year 2	Year 3	Total	Present value
Cost to implement and deploy Oracle Enterprise Manager	(\$31,250)				(\$31,250)	(\$31,250)
Annual administrator labor to maintain Oracle Enterprise Manager		(\$26,000)	(\$26,000)	(\$26,000)	(\$78,000)	(\$64,658)
License and support costs for Oracle Enterprise Manager Provisioning and Patch Automation Pack	(\$525,000)	(\$115,500)	(\$115,500)	(\$115,500)	(\$871,500)	(\$812,231)
License and support costs for Oracle Enterprise Manager Configuration Management Pack	(\$525,000)	(\$115,500)	(\$115,500)	(\$115,500)	(\$871,500)	(\$812,231)
Two servers to host Oracle Enterprise Manager	(\$30,000)	(\$3,000)	(\$3,000)	(\$3,000)	(\$39,000)	(\$37,461)
Administrator training expense	(\$27,000)				(\$27,000)	(\$27,000)
Total	(\$1,138,250)	(\$260,000)	(\$260,000)	(\$260,000)	(\$1,918,250)	(\$1,784,832)

Source: Forrester Research, Inc.

Benefits And Savings

The implementation of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack was the catalyst that helped the sample *Organization* achieve benefits in the following areas: administrator productivity savings, business productivity (avoiding downtime, increased availability), and capital expenditure savings (servers). These benefits are described and quantified below and total **\$4,916,781 (risk-adjusted)** over the three years of this study.

There are three adjustments that Forrester made to the benefit numbers to arrive at the risk-adjusted numbers. These adjustments are related to: the learning curve of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack; the variation in the amount of benefits that a company may experience; and variation in the number of benefits that a company may experience. These adjustments are described in the “Risk” section.

Benefits And Savings Details

Administrator Productivity Savings

The *Organization* was able to improve administrator productivity by a total of 63% in the first year, by 100% in the second year, and by 125 % in the third year as a result of productivity improvements achieved using Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack. The *Organization* achieved a risk-adjusted **\$1,498,725** in administrator labor savings (over a three-year period) from using the Packs based on labor saved in the following tasks:

Oracle Enterprise Manager Provisioning and Patch Automation Pack:

- o Planned patch events (e.g., patchset or major patches) for any OS, database, middleware, or application.

- Unplanned patch events (e.g., critical or minor patches) for any OS, database, middleware, or application.
- Single-instance database provisioning.
- Real Application Cluster (RAC) provisioning.
- Bare Metal Linux provisioning.

Oracle Enterprise Manager Configuration Management Pack:

- Track current system inventory and/or discover new hardware or software.
- Compare systems against baseline configurations or gold images to check for configuration drift.
- Monitor systems for changes in configuration or to check configuration history.
- Search for hardware/software assets or specific settings across your data center.
- Monitor systems for compliance against policies or standards.

Business Productivity Savings (Avoiding Downtime, Increased Availability)

The *Organization* achieved a risk-adjusted **\$2,555,556** in benefits (over a three-year period) from a reduction in system downtime and a corresponding increase in availability from the use of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack based on the following capabilities:

Oracle Enterprise Manager Provisioning and Patch Automation Pack:

- Downtime reduction due to automated patching of software.
- Downtime avoidance by extending capacity to mitigate node failure.

Oracle Enterprise Manager Configuration Management Pack:

- Reduction in time needed to make repairs (MTTR) based on identifying of out-of-band configuration changes causing downtime.
- Downtime reduction due to automated policy violation detection and mitigation.

Capital Expenditure Savings (Servers)

The *Organization* achieved a risk-adjusted **\$862,500** in benefits (over a three-year period) from capital spending avoidance on servers from the use of Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack based on the following capabilities:

Oracle Enterprise Manager Provisioning and Patch Automation Pack:

- Servers not purchased through consolidation with provisioning automation.

Oracle Enterprise Manager Configuration Management Pack:

- Servers not purchased through identification, utilization, and management of all known servers.

Table 3: Benefits And Savings Associated With Implementing Oracle Enterprise Manager Configuration Management Pack And Oracle Enterprise Manager Provisioning And Patch Automation Pack (Risk-Adjusted)

Projected benefit (risk-adjusted)	Initial	Year 1	Year 2	Year 3	Total	PV
Administrator productivity savings from Oracle Enterprise Manager Provisioning and Patch Automation Pack	\$0	\$14,402	\$23,043	\$28,803	\$66,247	\$53,776
Administrator productivity savings from configuration management pack	\$0	\$311,408	\$498,253	\$622,816	\$1,432,478	\$1,162,809
Business productivity savings from Oracle Enterprise Manager Provisioning and Patch Automation Pack	\$0	\$388,889	\$622,222	\$777,778	\$1,788,889	\$1,452,125
Business productivity savings from Oracle Enterprise Manager Configuration Management Pack	\$0	\$166,667	\$266,667	\$333,333	\$766,667	\$622,339
Capital expenditure savings from Oracle Enterprise Manager Provisioning and Patch Automation Pack	\$0	\$37,500	\$60,000	\$75,000	\$172,500	\$140,026
Capital expenditure productivity savings from Oracle Enterprise Manager Configuration Management Pack	\$0	\$150,000	\$240,000	\$300,000	\$690,000	\$560,105
Total benefits	\$0	\$1,068,865	\$1,710,185	\$2,137,731	\$4,916,781	\$3,991,180

Source: Forrester Research, Inc.

Risk

Risk-adjusted ROI is discussed in this study, and the sample *Organization's* benefits are quoted in risk-adjusted (worst-case) terms. Costs are not risk-adjusted in this study because 95% of the costs are related Oracle firm-quoted products and server hardware.

The assessment of risk provides a range of possible outcomes based on the risks associated with IT projects in general and specific risks relative to organizations implementing Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack. Forrester's research discovered that implementing Oracle Enterprise Manager was a relatively low-risk endeavor.

Since the future cannot be accurately predicted, there is risk inherent in any project. Measurement of risk is a method of incorporating the levels of confidence and uncertainty regarding the benefit estimates of a given investment. Higher confidence that the benefit estimates will be met implies that the level of risk is lower, and the variation between the risk-adjusted and non-risk-adjusted outcomes is minimized.

The following risks were considered in this report:

1. The "learning curve" factor.

The organizations Forrester interviewed cited a fairly significant learning curve in benefits realization, hence Forrester assumes that in Year 1, the sample *Organization* achieves

50% of the optimum level of benefits; in Year 2, it increases to 80%; and in Year 3, Forrester assumes (and interviewed organizations reported) a full 100% achievement of the benefits.

2. Variation in the value of realized benefits.

The organizations Forrester interviewed reported significant variations in the value of the benefits realized for the management tasks used to evaluate ROI. Based on reported data, Forrester developed “high”, “low”, and “most likely” values for each benefit. The risk-adjusted value is the mean of the distribution of those points. For the administrator productivity benefits, the “most likely” average task time savings is 1.5 hours. For downtime reduction, the “most likely” average downtime time saving is 0.63 hours per event. Refer to Appendix B for a detailed accounting of the variance in time savings realized.

3. Variation in the number of realized benefits.

The organizations Forrester interviewed did not all realize the same benefits because they did not all use the same features or functions offered by the Packs. For example, if Company A did not use the “single database provisioning” feature, it could not derive a benefit associated with this. To account for the variation in the number of realized benefits for the sample *Organization*, Forrester determined the percent of interviewed organizations that realized each benefit and adjusted the value of the benefit by this amount, i.e., if only 50% of companies used a specific feature and realized the associated benefit, then the value of benefit was adjusted by 50%. On average, the value of all benefits was adjusted by 63%. Refer to Appendix B for a detailed accounting of this risk-adjustment factor.

If a risk-adjusted ROI still demonstrates a compelling business case, it raises confidence that the investment is likely to succeed, since the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers should be taken as realistic expectations, since they represent the expected value considering risk. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

Financial Analysis

Below, Table 1 (repeated from the Key Findings section) shows a three-year summary of the ROI, payback period, net present value (NPV), costs, and risk-adjusted savings and benefits for our sample *Organization*.

Table 1: Three-Year Summary Financial Results — Sample Organization (Risk-Adjusted)

Summary financial results	Original estimate	Risk-adjusted
ROI	130%	124%
Payback period (months)	14	15
Total costs (PV)	(\$1,784,832)	(\$1,784,832)
Total benefits (PV)	\$4,106,273	\$3,991,180
Total (NPV)	\$2,321,442	\$2,206,349

* Forrester used a discount rate of 12% to calculate PV and NPV.

Source: Forrester Research, Inc.

The three-year risk-adjusted total net present value (NPV) of \$2,206,349 represents the incremental net cost savings and benefits attributed to successfully implementing and using Oracle Enterprise

Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack.

Cost and benefits details are provided in the “Costs, Benefits, and Risk” section. A risk-adjusted ROI that demonstrates a compelling business case raises confidence that the investment is likely to succeed because the risks that threaten the project have been taken into consideration and quantified. The risk-adjusted numbers, because they represent the expected value considering risk, should thus be taken as “realistic” expectations. Assuming normal success at mitigating risk, the risk-adjusted numbers should more closely reflect the expected outcome of the investment.

The objective of this study is to illustrate the savings and benefits the sample *Organization* realized from deploying Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack, not those that other organizations might obtain by doing so. The results can nevertheless guide other organizations’ expectations with respect to the savings and benefits that might be realized in their particular business environments.

Findings and Conclusions

This study is meant to provide the reader with a framework for examining the costs and benefits of deploying Oracle Enterprise Manager Configuration Management Pack and Oracle Enterprise Manager Provisioning and Patch Automation Pack (the Packs). Based on our in-depth discussions with six current Oracle customers, Forrester was able to estimate costs, benefits, and risks for a sample *Organization*. Our findings indicate that the *Organization* should achieve a **three-year risk-adjusted NPV of \$2,206,349, a very favorable 124% ROI, and a payback period of 15 months.**

As with the customers interviewed for this study, the implementation of the Packs was the catalyst that helped the sample *Organization* achieve benefits in the following areas: administrator productivity savings, business productivity (avoiding downtime, increased availability), and capital expenditure savings (servers).

Organizations that are likely to achieve these benefits have the following characteristics:

- Organizations with many OS, database, middleware, or applications being managed by many administrators having varying skill and experience levels and using nonstandard practices.
- IT departments experiencing a direct linear relationship between the growth in systems and the growth of administrator headcount, and that are looking to achieve productivity gains.
- Organizations that have a decentralized administration function and that need a more centralized platform to proactively monitor alerts for systems.
- Small-to-medium-size organizations with a part-time administrator, and/or system administrators performing administrator tasks that are looking for a more cost-effective and efficient way to manage their IT configurations.
- Businesses that rely on technology to generate revenues and profits and that are striving to be more competitive in their industry.

For our sample *Organization*, the Packs carry a low level of risk, a very positive **124% risk-adjusted ROI**, and a payback period of 15 months to recoup the investment.

For the sample *Organization*, the favorable risk-adjusted ROI and payback period raises confidence that an investment in Oracle Enterprise Manager is likely to succeed, since the risks that may threaten the project have already been taken into consideration and quantified. It's important to note that the value of the benefits realized will vary with the number of features and capabilities of each management pack that are utilized.

Forrester makes no assumptions regarding the effects of Oracle's solutions at other organizations. This study examines the potential impact attributable to the six organizations that participated in the examination and applies the common costs and benefits to the representative sample *Organization*. The underlying objective of this document is to provide guidance to technology decision-makers seeking to identify areas where value can potentially be created by using Oracle Enterprise Manager.

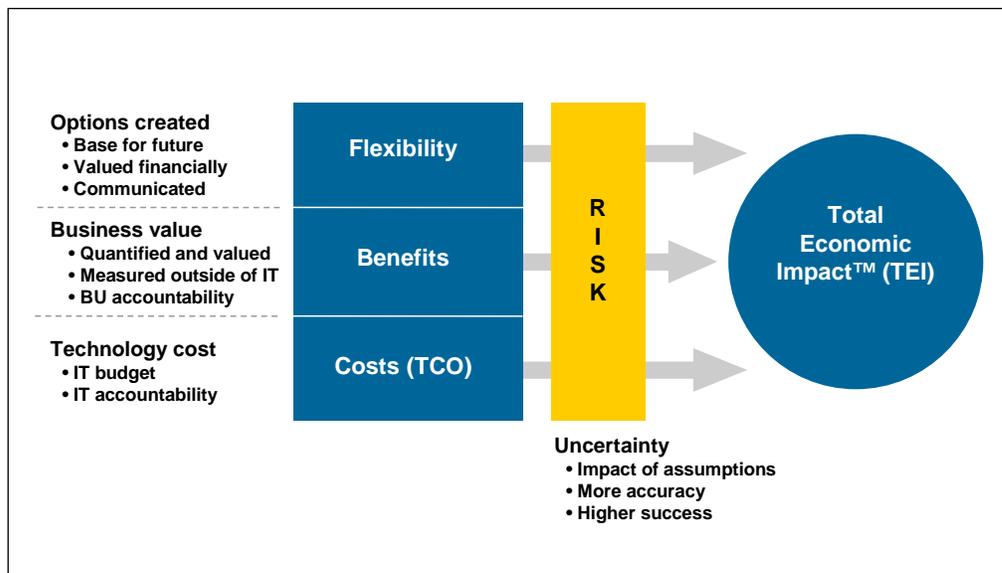
Appendix A: Total Economic Impact™ Primer

Total Economic Impact is primarily a common language tool that is designed to capture and properly communicate the value of IT initiatives in a common business language. In so doing, TEI considers four elements of any initiative:

- Benefits.
- Costs (sometimes referred to as total cost of ownership, or TCO).
- Flexibility.
- Risk.

Figure 1 shows the TEI methodology conceptually. Benefits, flexibility, and costs are considered, through the filter of risk assessment, in determining an expected ROI for any given initiative.

Figure 1: The Total Economic Impact Methodology



Source: Forrester Research, Inc.

Benefits

Benefits represent the value delivered to the business by the proposed project. Often, IT project justification exercises focus on cost (e.g., TCO) and cost reductions. Among industry leaders, IT is deployed as an offensive weapon with value expectations greater than simple cost reduction, especially when those cost reductions tend to focus within IT. TEI captures the value proposition of the proposed project by measuring the benefits against the incurred costs.

All benefits captured by TEI must be traceable back to one or more critical success factors (CSFs). These CSFs are directly linked to a higher-level business strategy. If a proposed technology investment generates benefits that cannot be satisfactorily linked to a CSF, then it will not be

included as a benefit for the organization in the model. In these cases, TEI requires that the benefit be discarded.

Under TEI, benefits may only accrue to the business units. Benefits derived through cost reductions within IT accrue as negative TCO to the IT budget, thereby showing a reduced TCO. (TCO is considered by TEI to be a single-dimension, cost-centric focus on the IT budget.)

The TEI process begins with a discovery of potential benefit areas. A representative, who has the ability to capture the benefit in question from the organization under examination, must validate each benefit captured during discovery. In other words, values cannot be arbitrarily assigned to a benefit if that person is not in a position to deliver that benefit should the project be approved.

Additionally, projects that are expected to deliver business value require some effort on the part of the business to realize that value. That effort may be in the form of training, organizational change, or a modification of existing business processes. Therefore, TEI requires dialog with the business leaders responsible for making the necessary changes in order to capture the proposed benefit during the justification phase. TEI captures this dialog in the form of the names of the individuals, which validates the value calculation of each benefit.

Within TEI, each benefit entered has a specific capture date. Although the benefit may be captured over time, TEI requires the specification of a date when most of the benefit has been captured. TEI will then place the value delivered in the appropriate time frame within the project.

Costs

Costs represent the investment necessary to capture the value, or benefits, of the proposed project. IT or the business units may incur costs. These may be in the form of fully burdened labor, subcontractors, or materials. Additionally, costs consider all the investment and expenses necessary to deliver the value proposed.

Flexibility

Flexibility, which is not a subject of this study, represents investing in additional capacity that can, for some future additional investment, be turned into a business benefit — for instance, an investment in an enterprisewide upgrade of the desktop word processor application where the primary driver may be standardization (to increase efficiency) and licensing (to decrease IT costs). However, a collaborative workgroup feature may translate into greater worker productivity when the organization is ready to absorb the discipline necessary to capture that benefit. The collaboration feature does not promise benefit during this phase of the project and must be captured later, incorporating additional investment, most likely in the form of training. However, the existence of the option has a present value that can be estimated. The flexibility component of TEI captures that value.

Risk

Risks are used to widen the possible outcomes of the project. Since the future cannot be accurately predicted, there is risk inherent in any project. TEI captures risk in the form of risks-to-benefits and risks-to-costs.

Risks-to-benefits considers all possible risks to each possible benefit. Likewise, risks-to-costs considers all possible risks to each possible cost. Then a range is chosen by applying best judgment for each cost and benefit, based on the set of risks assigned to each cost and benefit. The

range is entered in the form of a low estimate, a most-likely value, and a high estimate. For example, the risks to a cost may result in a range from the expected value as the low estimate to two times the expected value as the high for a particular cost (representing a potential two times cost overrun).

TEI applies a probability density function known as “triangular distribution” to the values entered. The expected value — the mean of the distribution — is used as the risk-adjusted cost or benefit number. The risk-adjusted costs and benefits are then summed to yield a complete risk-adjusted summary and ROI.

Typical project risk factors to consider include the following:

- **Vendors.** The risk that the vendor of a product or technology may need to be replaced at some point during the project duration.
- **Products.** The risk that a product will not deliver the functionality expected.
- **Architecture.** The risk that the current product architecture will not allow future infrastructure decisions and changes.
- **Culture.** The risk that an organization will be unable to absorb the new technology or adapt to its implementation.
- **Delays.** The impact on revenues of a project delay or cancellation.
- **Size.** The direct correlation of project risk to the size of the project, as measured by application size or budget.

Appendix B: Risk-Adjustment Factors

Table 4 provides details regarding the variance in task time benefits and percent of benefit realized that were used to calculate the risk-adjusted benefits.

Table 4: Benefit Category Risk Adjustment Factors

Benefit category	Value of realized benefit (hours)			Percent of benefit realized
	Low	Most likely	High	
Planned patch events (e.g., patchset or major patches) for any OS, database, middleware, or application	0.5	2.2	3.5	67%
Unplanned patch events (e.g., critical or minor patches) for any OS, database, middleware, or application	2	2.67	3.67	67%
Single-instance database provisioning	0.5	2.75	3.75	33%
Real Application Cluster (RAC) provisioning	0.5	2.08	3.67	33%
Bare Metal Linux provisioning	0.5	3	5.5	50%
Downtime reduction due to automated patching of software	0.5	1.0	1.0	50%
Downtime avoidance by extending capacity to mitigate node failure	0.5	1.0	1.0	67%
Server (assets) saved through consolidation with provisioning automation				50%
Track current system inventory and/or discover new hardware or software.	0.15	0.5	0.83	83%
Compare systems against baseline configurations or gold images to check for configuration drift.	0.5	0.98	2.67	67%
Monitor systems for changes in configuration or to check configuration history.	0.5	0.73	1.5	67%
Search for hardware/software assets or specific settings across your data center.	0.08	0.25	0.5	83%
Monitor systems for compliance against policies or standards.	0.33	0.5	0.83	83%
Reduction in time needed to make repairs (MTTR) based on identifying of out-of-band configuration changes causing downtime	0.17	0.25	0.33	67%
Downtime reduction due to automated policy violation detection and mitigation	0.17	0.25	0.33	67%
Servers (assets) not purchased through identification, utilization, and management of all known servers				50%

Source: Forrester Research, Inc.