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An Oracle White Paper
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Best Practices for Upgrading Oracle E-Business Suite

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Introduction

As part of Oracle's commitment to Applications Unlimited, Oracle E-Business Suite continues to evolve, offering greater value and providing new advantages for your business. Upgrading Oracle E-Business Suite is key to realizing the maximum return on your Oracle investment.

Oracle E-Business Suite has evolved over time, and Oracle's commitment to customers, this suite of applications, and creating best-in-class products remains steadfast. The Oracle E-Business Suite product has expanded significantly in functionality, scalability, usability, and reduced cost of ownership over the past few releases, including dramatic leaps with the recent Oracle E-Business Suite Release 12.

This white paper guides you through the major areas to consider in determining when an upgrade is appropriate for your organization. Based on your current release of Oracle E-Business Suite software, it reviews the most common upgrade paths for specific releases and aims to provide you with a framework for determining the best possible upgrade agenda for your organization. It also includes information about future upgrade options to the next generation of application software currently branded as Oracle Fusion Applications. Applications Unlimited and Oracle Fusion Applications together give you the flexibility that you need to create an upgrade plan that maximizes the value of your Oracle E-Business Suite investment.

There are many reasons to consider upgrading your current Oracle E-Business Suite version. For example:

- Upgrading may provide access to new functionality and software applications that can help keep your organization well positioned to meet your business objectives through leveraging the latest technology

- In an increasingly rigorous regulatory compliance environment, upgrading may facilitate compliance at a lower cost through retiring customizations and deploying standard processes across your organization

- Upgrading allows you to leverage the latest performance and usability enhancements, enabling you to increase the efficiency of your applications utilization and your business

- You may need to upgrade to remain eligible for the highest levels of product support

- You may need to upgrade to remain eligible for tax and regulatory updates for your applications

In evaluating any upgrade, there are many factors to consider, such as support timeframes, functional capabilities, technical infrastructure, and underlying business needs. These factors are often complex and interrelated—all of which adds to the importance of determining the most appropriate upgrade strategy.

To help you make an informed decision, this paper outlines our plans for supporting and advancing Oracle E-Business Suite as well as its successor, Oracle Fusion Applications.

Upgrade Overview

Before pursuing an upgrade, it is imperative that you fully understand the upgrade process, potential upgrade paths, and most importantly, your criteria for considering an upgrade of your Oracle E-Business Suite solution.
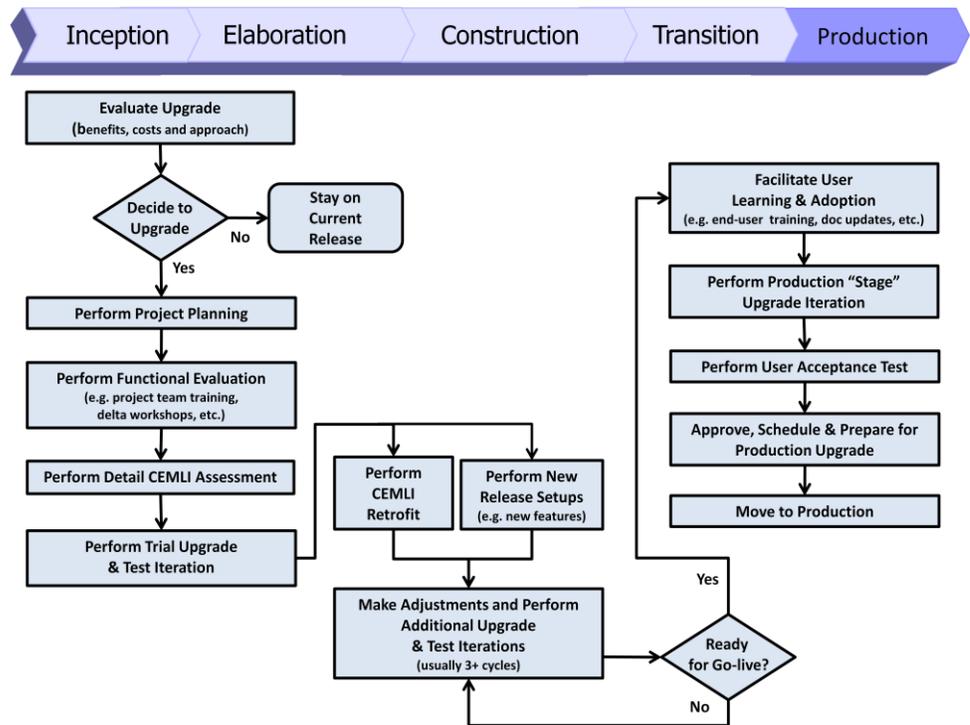
The Upgrade Process

An upgrade project is similar to an implementation project; however, upgrade projects can be significantly more efficient than implementations because they leverage your previous implementation efforts and outputs. In addition, upgrades can be executed within the current change management system used by your organization.

Within the upgrade project, there are several key areas of work that begin with project evaluation and definition, continuing through the adoption of the new system by personnel.

A standard upgrade project can be divided into the following six major phases:

- Evaluating the upgrade (including development of a comprehensive business case)
- Planning the upgrade project
- Performing the technical upgrade (including conference room pilots/test rounds)
- Performing the functional testing (including conference room pilots/test rounds)
- Facilitating end-user learning and adoption
- Cutover to production

The following graphic presents the standard upgrade process at a high level:

Although an upgrade project is similar to an implementation project, the upgrade project can be significantly more efficient because it leverages your previous implementation efforts and outputs.

Evaluate Upgrade

Before initiating an upgrade effort, it is important to thoroughly evaluate the new release to confirm whether the new capabilities and architectural enhancements will provide proportionate positive benefits and business value to justify an upgrade. Consideration should include the initial evaluation of existing CEMLIs (Configurations/Customization, Extension, Modification, Localization and Internationalization, and Integration) that may be totally removed or will require updates due to the enhancements of the upgrade. These too can have a positive impact on business value.

If you have governance mechanisms such as steering committees and technology strategy boards, they can guide this evaluation process. Your Oracle representatives can provide useful information to guide the process and bring Oracle Applications knowledge and analysis subject matter experts (SME), which should be leveraged to confirm your analysis is holistic.

Documentation review should comprise a key facet of your Oracle E-Business Suite upgrade evaluation. Information such as release notes can help in determining what will change in an upgraded system, and make you familiar with new features.

Upgrade Planning

A successful upgrade starts with a clear definition of project scope and a detailed project plan, based on the output of the upgrade evaluation as described above. The definition of scope should include the upgrade objectives, decisions regarding any new features and functionality to be implemented, potential changes to business processes, the impact of the upgrade on customizations or interfaces in your current environment, and system downtime requirements.

The plan should include the processes, tools and people required to manage the project and assure quality and expected benefits. Moreover, the plan should identify required project team members and clearly define their roles. Typically, an upgrade team combines both internal and consulting resources. Technical staff familiar with customizations and interfaces should be included in the project, along with business users adept at using current Oracle functionality within their business processes. Oracle Consulting resources will provide the expertise in project management, supply knowledge of new technical and functional enhancements, and bring experience of upgrades undertaken by other clients.

Communication with key stakeholders in the upgrade plan is an imperative for success. Key stakeholders include everyone in the company affected by the upgrade, from the accounts payable clerk or shipper/receiver right up to the executives approving expense reports. Generally, people do not like change; they may even fear change. Therefore, begin communicating the benefits of the upgrade immediately. As the project progresses, send out the training plans and encourage everyone to participate.

Once the high-level technical decisions are made, detailed upgrade planning should begin. DBAs should download and review the Oracle Application Upgrade documentation and product release notes for their chosen upgrade path. In addition, they should review any additional documentation for database upgrades, Middle Tier, and so on, to understand which steps need to be performed and which steps are deemed out of scope.

Perform Functional Evaluation

An 11*i* to Release 12 upgrade involves significant changes in data model and functionality, especially in the Financials product area. Release 12 includes centralized functionality to handle accounting, taxation, and access to data across organizations, with more flexible implementation options than were available in Release 11*i* to meet a wider variety of business needs. Release 12 contains significant enhancements to the other product areas, including Procurement, Supply Chain Management, Human Capital Management, Customer Relationship Management and Master Data Management.

When considering an upgrade, it is important for your organization to perform a functional evaluation of your current application environment and analyze existing gaps across your Oracle EBS suite of applications. Embarking on a R12 upgrade

project provides an opportunity to revisit your organization's key business priorities, issues and challenges. It is critical to conduct an assessment of your current applications usage, identify key process and application issues, analyze manual process steps and third party components, and review existing customizations, modifications and enhancements. Oracle EBS R12 offers new features, functionalities and processes and new products. As part of assessing the business value in upgrading to a new release, it is essential to understand new release capabilities and the benefits of adopting standardized processes and leading practices. It is essential that your application specialists understand the concepts underlying the setup and use of Organization Models, Reporting, Accounting, Worldwide Operations, Governance, Risk Management, and Compliance, and Business Analytics and Corporate Performance Management. Your application specialists should conduct a thorough review of Release 12 enhancements module by module, understanding new features and process changes that come by default, along with optional new features that you may want to implement. Oracle Consulting resources provide project team training on functional enhancements, new products, leading practices, and bring experience of upgrades undertaken by other clients.

Perform CEMLI Evaluation

In conjunction with the Functional Assessment, the majority of Oracle applications customers will also conduct a review of the CEMLIs (Configurations/Customization, Extension, Modification, Localization and Internationalization, and Integration) that have been added to the delivered application. R12 provides significant additional functionality and presents the opportunity to remove customizations during the upgrade and replaced with delivered functionality. Decisions to removed customizations during the upgrade project will reduce your future Total Cost of Ownership (TCO) through lower costs of maintaining your application in production, lower development costs, and lower future upgrade costs.

Consideration should include the initial evaluation of existing CEMLIs that may require updates due to the enhancements of the upgrade. This evaluation will help the upgrade project team determine the amount of development support that is required during the upgrade as well as highlight areas that may need additional focus during the upgrade testing activities.

Executing the technical upgrade is a critical initial phase to a successful upgrade project. Prior to executing the upgrade, you must decide what systems and operations will be affected by any production outages. Items such as hardware upgrades or changes to database upgrades need to be considered during the outage window.

Next, create a detailed technical upgrade document, specifically tailored for your environment and goals. Once this document is approved, Oracle strongly recommends that you perform a "practice upgrade" of a clone (or shadow) instance of your production instance to gain experience with your unique upgrade and environments, as well as to expose any potential issues.

You should document the practice upgrade in detail, including, as a minimum, any issues and their resolution. The original detailed technical upgrade document should then be updated to include the lessons learned during the practice upgrade and each subsequent upgrade.

Please note that it may be useful to set checkpoints during the practice upgrade and capture regular backups throughout the upgrade process. If issues are experienced in subsequent steps, you may be able to restore the environment to a specific point rather than reinitiating the entire upgrade process.

CEMLI Retrofit

Any custom code integrated with Oracle E-Business Suite may be impacted during an upgrade. It is important to not only identify any custom code but also track the progress of any retrofit efforts during the project. You need to identify the code, who owns the code, and its status.

During the original implementation of Oracle software, any customizations should have been registered as a custom application using the System Administrator responsibility. A supporting directory structure on the application server should have also been created at this time. All customizations registered as custom applications will be protected from being overwritten during the upgrade process. If a custom application was not used for some or all of the current customizations, perform this step prior to initiating the upgrade.

All interfaces, form customizations, descriptive flexfields, and customized reports will require extensive testing to ensure that they have not been affected by changes to tables or APIs in the upgraded software. Custom responsibilities and menus must be reviewed and potentially updated as well. In some cases, customizations

can be removed following an upgrade if new features and functionality satisfy the business requirements previously met with the custom code.

New Release Setups

Some accounting entities (such as taxes, banks and suppliers) that were modeled by several Financials products in Release 11*i* were moved to a common implementation starting with Release 12. Upgrading to R12 will require some setup of the new Financials features that come by default. In R12, you will need to understand the impact of new features such as Trading Community Architecture (TCA) for supplier data, Payments and E-Business Tax.

There is a separate guide that focuses on Financials upgrade impacts: *Oracle Financials and Oracle Procurement Functional Upgrade Guide: Release 11i to Release 12*. It explains how 11*i* Financials setup and transaction data are upgraded, addressing questions such as:

> What happens to my Tax Codes?
>
> How are the new Payables Invoice Lines derived?
>
> How are Legal Entities derived?
>
> How does the Accounting Setup Manager get set up?
>
> How will my Bank Accounts be migrated?
>
> How are Suppliers and Supplier Sites moved into Trading Community Architecture (TCA)?
>
> How have Global Descriptive Flexfields changed?
>
> How have Profile Options changed?

Additional advice on the Financials upgrade is provided in the "R12 Upgrade Considerations by Product: Financials", which details process changes, configuration changes, and other upgrade considerations that your Financials applications specialists should understand (see My Oracle Support Knowledge Document 889733.1.)

Make Adjustments and Perform Additional Upgrade & Test Iterations

Test scripts prepared during your initial Oracle implementation should be used as the baseline test scripts for the upgraded test environment. These scripts should be modified and additional scripts written for any changes in functionality that result from the upgrade. Be certain to allow for any changes in business process and modify scripts accordingly. Expected results from the test scripts should be included so that they can be compared against actual results during testing.

Multiple rounds of testing should be completed to validate results. The first round of testing may be done by Oracle Consulting to verify any setup changes or patch

applications. However, business end users should be included in testing as soon as possible and must ultimately decide if the tests are passed or failed. Between rounds of testing, make any setup changes or apply patches and retest.

End User Learning and Adoption

Prepare training documentation and update user guides to reflect changes in both functionality and business process, if applicable. Note that this may include removing steps in a business process if the upgrade has streamlined the process or removed customizations that are no longer needed.

Production "State" Upgrade Iteration

Converting your data accurately and efficiently depends on the quality and makeup of the data itself. Working with a current copy of your production data will give you valuable information about how the testing process should be structured as well as how long it will take to complete. Typically, your first conversion will be the longest and the most difficult.

As you progress through the upgrade project, continue to work with accurate, current data, taking a fresh copy as directed in your upgrade path documentation. This consideration not only ensures the highest data quality, but will provide more accurate upgrade activity time estimates during performance testing.

User Acceptance Test

The final step in the upgrade's quality assurance process is to conduct the User Acceptance Test, also known as UAT. This test is the final validation of system functionality, business processes and data, and, more importantly, serves as the point of user acceptance of the new system. User acceptance is defined early in the project, establishing success (or acceptance) criteria for system performance; and these criteria are validated in the UAT for acceptable conformance. Business leaders will accept or approve the system based on the results of UAT, and will promote the upgrade process to cutover planning and preparation.

Approve Schedule & Prepare for Production Upgrade

Ultimately, the decision to start running the business on the new solution must be made internally, and taken seriously. As you approach the milestone of a new Oracle E-Business Suite solution, make sure that the team has enough information to enable a defensible "go" or "no go" decision to be made. The go live checklist created earlier in the upgrade process should be leveraged to verify that the success criteria have been achieved during the project.

Make sure that all affected groups from both business and IT are represented in this decision. If you have a formal steering committee, this will be the appropriate decision-making body. If for some reason there is no steering committee, call a meeting for this purpose, gathering input from the stakeholders ahead of time and fostering the communication that will allow for an informed and broadly supported decision.

End User Learning and Adoption

Prepare training documentation and update user guides to reflect changes in both functionality and business process, if applicable. Note that this may include removing steps in a business process if the upgrade has streamlined the process or removed customizations that are no longer needed.

Cutover to Production

At cutover, the final "production" upgrade pass is completed. As part of this effort to upgrade the production environment, a step-by-step go-live plan should be executed that includes all technical and functional upgrade steps. A formal go-live checklist is advisable to verify that all steps were completed.

A detailed, well-planned, and coordinated production upgrade is important in reducing the production outage window and minimizing risk. There are a number of techniques you can employ to reduce downtime, such as staged upgrades, patch merging, distributed upgrade, and parallel processing. Oracle Consulting can assist you in using these techniques and help reduce your production outage.

Examining Your Upgrade Criteria

There are several areas to consider as you develop the business case to upgrade Oracle E-Business Suite. These areas may include application functionality, technological enhancements, operational considerations, and support availability.

Application Functionality

When considering an upgrade, most organizations begin with a critical assessment of the new capabilities and enhancements to current features provided in the new release. A firm grasp of these new capabilities and enhancements is essential to evaluating the value to be gained through your organization's investment of time and resources.

If you are running multiple instances of Oracle E-Business Suite, your upgrade analysis should examine the value of incorporating instance consolidation into the upgrade project. Oracle Corporation saved over US$1 billion annually after consolidating to a single, global instance.

In many instances, new capabilities can offer productivity advantages, increased business value, and lower operational costs (for example, through the retirement of customizations). In evaluating any new Oracle E-Business Suite release, think about

your current environment and whether the version in place meets the needs of today as well as the demands of your business for the next three to five years.

The Oracle E-Business Suite release notes are the best first step to understanding the major changes included in the new release. Also, these documents provide valuable references to other documentation that can help you evaluate and implement the new release. Your Oracle Consulting sales representative can help you identify new features, functionality, and processes that may provide value to your organization.

Technological Enhancements

As you evolve your application upgrade strategy, you should consider your technical infrastructure requirements, including client architecture, application server, Web services, and database options. Consider what has changed or what will change in terms of platform support, and also be aware of infrastructure enhancements that may provide additional benefits to your production environments.

Oracle E-Business Suite has traditionally offered several choices of technical infrastructure, and this flexibility continues to be available. In the past year, Oracle expanded the choices again, with the additional infrastructure option of Oracle Fusion Middleware for your Oracle E-Business Suite applications

Oracle's industry-leading Lifetime Support Policy of your infrastructure configuration is well documented in the document *Lifetime Support Policy: Coverage for Applications and Server Technologies*. Regardless, you should always confirm your specific infrastructure components when preparing for your upgrade.

Operational Considerations

Oracle continually seeks to improve your return on investment by leveraging technology to reduce the resources required to operate and maintain your enterprise solutions. This means customers like you can install and implement software more quickly, simplify upgrades, receive real-time support and performance diagnostics, and achieve robust integration with other e-business software—delivering quantifiable benefits.

Oracle E-Business Suite Release 12 release takes these benefits to the next level. Oracle continues to deliver improvements that will further reduce implementation costs, enhance usability, and increase supportability.

For organizations running more than one instance of Oracle E-Business Suite, the cost, risk, and operational value of instance consolidation should be included in your upgrade value analysis. This evaluation period represents an optimal time to consider consolidating several instances into a more manageable profile. Oracle Corporation itself saved more than US$1 billion by merging several global versions into one consolidated instance.

Support Availability

A key reason for pursuing upgrades is to ensure continued access to the robust technical support that Oracle E-Business Suite application users have come to expect. As part of our Applications Unlimited commitment to our customers, Oracle provides continued enhancements to the current Oracle applications beyond the delivery of Oracle Fusion. Oracle is committed to supporting customer investments in technology platforms for these applications, as well as certified infrastructure products (hardware, operating systems, databases and middleware). Details can be accessed at the following location: oracle.com/support/library/data-sheet/oracle-lifetime-support-policy-datasheet.pdf

With the guaranteed support announced through the Oracle Lifetime Support initiative, Oracle customers can remain on their Oracle E-Business Suite applications and be confident of support as long as they remain aligned with the currently supported platforms. Oracle is providing more visibility into product road maps, and is helping customers derive continual success from their current applications by delivering dedicated, world-class development and support for years to come.

When examining your infrastructure support availability, be sure to include an analysis of your hardware and operating system end-of-life support dates, if any.

Identifying Your Upgrade Path

In addition to the factors just discussed, you may also want to consider the amount of time needed to upgrade and ensure you will have the full support and coverage for your solution. The timing of the release availability should not significantly alter your upgrade plans; instead, as mentioned above, your upgrade decision should be based on the ability of your currently deployed release to support your business in the near-to-medium term.

It is important to note that Oracle Fusion will evolve as an optional "path" to the future, rather than a "destination." Your Oracle E-Business Suite solution will continue to evolve over time, adopting Oracle Fusion technologies as they become available. Portions of Oracle Fusion technology are already partially available in Oracle E-Business Suite Release 12, and are planned for future releases of Oracle E-Business Suite applications as well.

Whether or not you are planning to upgrade to Oracle Fusion Applications in the next few years, you should still factor the upgrade path to Oracle Fusion into your plans to minimize future cost and risk should you later discover that this path best satisfies your business objectives. Based on customer feedback, we are planning to deliver scripts to upgrade directly to Oracle Fusion Applications from Oracle E-Business Suite 11*i*.10 and later releases. In short, while the business benefits of running Oracle Fusion Applications may be substantial, upgrades to Oracle Fusion will be entirely optional given the continued commitment of Applications Unlimited, and your own unique business objectives. Still, as needs change rapidly

in today's dynamic business environment, it is wise to position yourself for the greatest flexibility in your future upgrade options.

The following sections show examples of upgrade paths for each release of Oracle E-Business Suite software. We expect that customers will be on these releases for several years, and we have therefore created a general set of recommended upgrade paths. While each situation is unique, the upgrade path recommendations should assist in providing you with a basic framework for discussion with your Oracle account representative.

Customers on Oracle E-Business Suite 10.7/11.0.3 and 11.5.x

Customers running Oracle E-Business Suite 10.7 and 11.0.3 and Oracle E-Business Suite 11.5.x will have full support, including access to newly created patches and fixes, and upgrade scripts to the most current Oracle E-Business Suite software releases.

Upgrading from Oracle E-Business Suite 10.7 to Oracle E-Business Suite Release 12

A typical upgrade path for an Oracle E-Business Suite 10.7 customer is as follows:

1. Use rapidwiz to install the upgrade filesystem (11i)
2. Upgrade the database to Oracle Database 9i
3. Upgrade to 11i.0 using autouprade process (adaimgr)
4. Upgrade to 11*i*.10.2 by apply 11i upgrade driver
5. Use rapidwiz to install the upgrade filesystem for Release 12
6. Apply prerequisites for Release 12
7. Configure the database to use OATM
8. Apply the Release 12 upgrade driver
9. Apply post-Release 12 patches
10. Upgrade the database to Oracle Database 11g

Upgrading from Oracle E-Business Suite 11.0.3 to Oracle E-Business Suite Release 12

A typical upgrade path for an Oracle E-Business Suite 11.0.3 customer is as follows:

1. Use rapidwiz to install the upgrade filesystem (11i)
2. Upgrade the database to Oracle Database 9i
3. Upgrade to 11i.0 using autouprade process (adaimgr)
4. Upgrade to 11*i*.10.2 by apply 11i upgrade driver
5. Use rapidwiz to install the upgrade filesystem for Release 12
6. Apply prerequisites for Release 12

7. Configure the database to use OATM

8. Apply the Release 12 upgrade driver

9. Apply post-Release 12 patches

10. Upgrade the database to Oracle Database 11g

Upgrading form Oracle E-Business Suite 11.5.x to Oracle E-Business Suite Release 12

A typical upgrade path for an Oracle E-Business Suite 11.5.x customer is as follows:

1. Upgrade to release 11.5.9 or higher. An upgrade to 11*i*.10.2 is recommended.

2. Upgrade the database to Oracle Database 10*g*

3. Apply prerequisites for Release 12

4. Configure the database to use OATM

5. Apply the Release 12 upgrade driver

6. Apply post–Release 12 patches

7. Upgrade the database to Oracle Database 11g

For more information on the supported/recommended upgrade paths from Oracle E-Business Suite 11.5.x, please review *Oracle Applications: Upgrade Guide: Release 11i to Release 12* (part No. E16342-04), chapter 1.

Upgrade Best Practices

In preparing to successfully upgrade, there are multiple considerations to include in your upgrade planning and execution efforts. Within this publication, Oracle has gathered tips and techniques from hundreds of experienced systems managers, consultants, and partners. These recommendations are intended to help you learn from others and manage a successful upgrade project.

General Recommendations

The following general considerations should form the backbone of your upgrade initiative.

Tip #1—Determine Your Upgrade Path

Treat upgrades as combined business and technology projects to get the most value out of your Oracle investment.

Refer to the system requirements and supported platforms on Oracle*MetaLink* to determine supported upgrade paths for major releases. Verify whether you can upgrade directly to the latest release or whether you must first upgrade to a previous release before moving to this target release. In addition, evaluate the complexity of your upgrade effort based on the number of modules implemented, number of customizations, number of integration points, number of interfaces, and the total number of scripts. Finally, determine the metrics and cost associated with

each aspect of the upgrade. Each consideration should be addressed through a thorough upgrade assessment.

Tip #2—Treat Your Upgrade Activity as a Formal Company Project

The single best predictor of upgrade success may be the planning and project management rigor invested. A structured approach for managing the tasks, resolving issues, and measuring progress is absolutely critical. Equally important is a clearly defined and documented project scope. A defined scope is critical to project measurements necessary for time and cost containment. Experience has demonstrated that clear issue definition, strong project management, and executive ownership are critical success factors to a well-performing project effort.

If your organization has good project management expertise in house, you have an important asset to leverage. However, if this expertise is not readily available, it should be acquired early on in the project to ensure proper guidance and controls are in place. In either case, you will need someone with experience managing technical projects who can also help you anticipate and manage the effects of this initiative on other parts of the organization, including end users, managers, and executives.

Tip #3—Use Change Management Appropriate for an Upgrade

During an upgrade, it is imperative to freeze metadata and system data in your production environment. With respect to the new release, ensure all relevant patches available are applied appropriately. Failure to effectively manage these different change management requirements can result in upgrade step failures and unexpected user acceptance test results.

Once you have addressed this consideration, you should proactively search for issues throughout your upgrade effort and schedule relevant updates until you reach a "go/no-go" milestone. Periodically check for known issues within the specific products installed with Oracle E-Business Suite; for example, if using HR reference, you should review Oracle*MetaLink* Note 135266.1, *Oracle HRMS Product Family - Release 11i Information*, for the latest known issues with the Oracle Human Resources Management System application.

At this point, you should enforce a new release content freeze to stabilize the environment. For information on relevant patches, periodically consult Oracle*MetaLink*. Also, depending on your Oracle E-Business Suite release, you may also be able to leverage the built-in patch recommendation capabilities of Oracle Applications Manager.

Tip #4—Build an Upgrade Team with Broad and Complementary Skills

Several different skill sets will be necessary to successfully upgrade your system. The following list details recommended roles that should be staffed within an upgrade project team. Note that a steering committee is critical to success. Creation of an active and interested steering committee is imperative because critical

business decisions must be efficiently made and dealt with throughout the project. Furthermore, project failures are often traced to the lack of an effective governance body. If possible, enlist people who were involved in the original Oracle implementation project to take part in the upgrade project. This will leverage not only their knowledge of Oracle, but also their information on the implementation process itself.

A typical upgrade team should include the following members:

- Steering committee

- Business owner of the application (such as the CFO)

- Application data owner

- Key user group representatives

- Dedicated project manager

- Technical functional lead

- Oracle E-Business Suite administrator

- Database administrator

- Technical change management owner/release coordinator

- Operating system administrator(s)

- Testers—both technical and functional

- Technical upgrade specialist(s)

- Organizational change management/training lead

Tip #5—Utilize Peer and Oracle Resources

Most organizations sponsor upgrade projects infrequently, so it is important to leverage the experiences of others as much as possible.

Use these links to gather information from Oracle and interact with other users of Oracle E-Business Suite.

- Participate in relevant Customer Technical Forums:
  https://communities.oracle.com/

- Contribute to the Oracle E-Business Suite Technology Blog:
  http://blogs.oracle.com/schan/

- See if Oracle Support Upgrade Assistance is a good fit for your upgrade:
  See Oracle*MetaLink* Note 275737.1

- Regularly check Oracle*MetaLink:*
  https://support.oracle.com/

- Regularly review Oracle Applications Documentation Resources:
  See Oracle*MetaLink* Note 790942.1

Tip #6—Decide When to Change or Add Business Processes

In many cases, there is functionality in the release being evaluated that will help your business improve processes and automate tasks. This can be a small enhancement to business processes you are already using, or larger changes such as the adoption of a new module. One critical decision for your upgrade project is whether you will implement the new functionality as part of the upgrade, or upgrade your current processes without change, and implement new functionality as a follow-on project.

Generally, implementing your current processes in a new system can be a way to mitigate risk in the upgrade project. However, your business realities may preclude this approach, especially if the updated processes native in the software can markedly improve operations. For example, the business may be driving to take advantage of new capabilities as quickly as possible, or it may be more appropriate to modify processes and engage in a coordinated training effort to increase user adoption of the new solution.

By carefully weighing the pros and cons of these approaches, you can choose the best strategy for your organization.

Tip #7—Plan for Upgrade Tuning

Another critical area that should be considered is the performance tuning of your new system. Tuning your production upgrade scripts can significantly reduce downtime during the final stages of your upgrade.

Take advantage of the expertise of an Oracle consultant who has experience tuning your new release to ensure you get the most from your infrastructure, even if you have the expertise to execute other areas of the project yourself.

Oracle rigorously tests each supported upgrade path for technical and functional accuracy and for optimized performance. The most productive performance testing is completed on customer data. Whenever possible, Oracle's upgrade development experts perform detailed analysis on customer databases to tune the conversion code. To participate in the Customer Database program, contact your Oracle account manager.

Tip #8—Get Current Product and Upgrade Information

Make sure that you are using available Oracle resources to help you gather current information for your project, and work with Oracle Support for critical case management throughout your conversion timeframe. Oracle has increased its focus on assembling assets to help customers with upgrades, and leveraging these resources will increase your ability to upgrade smoothly.

Oracle maintains several resources to ensure that you obtain the most relevant information for your upgrade initiative. Several outstanding resources can be located on publicly available Oracle systems. In addition, upon product general

availability, the Oracle E-Business Suite Upgrade Web site is a good starting point for all types of upgrade information.

Finally, make sure you get the most current documentation available. Oracle provides several types of documentation to help you navigate a successful upgrade project. These materials can be accessed on Oracle*MetaLink* via the Oracle E-Business Suite Release 12 Info Center, or directly using the following link: oracle.com/technology/documentation/applications.html

Tip #9—Escalate and Resolve Problems as Appropriate

Use Oracle Support if you believe application issues are being experienced. The Global Support Center staff and your account team can provide assistance to help your team train first line staff to log cases appropriately and as completely as possible, including all information necessary to determine case prioritization. Please see Oracle*MetaLink* Note 166650.1, *Working Effectively with Global Customer Support*, which lists all severity definitions and best practices for working with Oracle Support before the project begins, as well as Note 199389.1, *Escalating Issues—The Oracle Support Services Escalation Process, Frequently Asked Questions*.

Tip #10—Utilize the Configuration Support Manager

Configuration Support Manager allows you to define computer configurations that describe your Oracle environment, and milestones for projects involving Oracle products. Providing this information will allow you to log technical service requests (TSRs) with less data entry and track issues more effectively, and will allow Oracle to proactively suggest solutions and resolve issues faster. For more details, see Oracle*MetaLink* Note 406369.1, Oracle Configuration Manager and E-Business Suite Release 12 Release Notes.

Project Initiation Considerations

There are a number of things that you can do as your project begins, or even before it formally kicks off, which will ensure that the project has a proper foundation and is well positioned for success.

Tip #11—Prepare the Organization

As you enter the initial stages of an upgrade project, engage the entire affected organization to help them prepare for the work ahead and the changes they will experience in their jobs. Obtain formal buy-in from the stakeholder organizations and kick off the project in a face-to-face meeting. Formality, visibility to upper management, and team building can be key aids to securing the cooperation and problem solving help you will need as the project progresses.

These discussions should include both the business impact of the change and the associated change schedule. For example, secure agreement on all business blackout periods necessary for system changes.

Once the project starts, provide regular updates regarding the progress of the upgrade to the organization.

Tip #12—Ensure the Quality of Your Data

One of the key steps in preparing for a successful upgrade is ensuring that your data is accurate and complete. You should have standard practices for handling duplicate records, verifying data integrity, and ensuring the overall health of your data. The time before an upgrade is an important time to review what practices are in place or need to be created to ensure that your data is relevant and reliable.

Ensuring high quality data using these techniques will aid the effective completion of table conversions and will assist greatly in seamless operation of your Oracle E-Business Suite solution after the upgrade is complete.

In like fashion, it's recommended that you complete a detailed review of your current reporting strategy prior to the upgrade. A clearly stated policy of reporting preference (for example, Web versus paper) with a goal toward report reduction or consolidation can improve the efficiency of your operations, promote cost reductions, and minimize report maintenance.

Tip #13—Inventory Your System

All configuration elements of your enterprise system should be inventoried and the current configuration items (versions) should be copied and stored for technical change management control. Oracle Applications Implementation Method (AIM) provides a set of templates that allow you to record your application configuration.

Upgrading is analogous to moving; before starting, you have to make sure where all your belongings are and that they are being handled appropriately. Early in your project, be diligent in gathering this information through composing and completing a preliminary upgrade questionnaire. Among the key considerations to include in your inventory process should be

- Customizations, extensions, and modifications

- Localizations

- Interfaces, APIs, and integrations

- Third-party products

- Hardware

- Software releases and patches, including operating system, database, and Oracle E-Business Suite applications

Standard Oracle E-Business Suite tools such as Oracle Applications Manager can aid in the creation of this inventory.

Tip #14—Prepare a Go Live Checklist

Once you have completed the initial planning, create a checklist of criteria to guide the ultimate deployment of the upgraded solution. The planning activities should allow you to develop a robust checklist to assess appropriate "go/no-go" decision points. Creating this checklist as soon as possible is a good way to organize project goals, validate your plan, and identify your success criteria before the pressure is on to complete the project. This list should be reviewed periodically during the upgrade to ensure progress is sufficient to complete on time.

Tip #15—Understand and Mitigate Project Risks

Early in the project, a risk analysis should be undertaken to determine project risks such as resource contention, other projects going live at the same time, and so on. For risks that have a high probability of occurring and have a large impact, specific mitigation plans should be developed. These plans describe, in advance, what actions to take if the risk becomes a reality. The analysis and plans need to be reviewed on a regular basis throughout the project.

Look for key points of failure, especially in the area of resource loading for your technical and business specialists. If you lack bench strength in any particular areas, develop a plan to supplement and/or back up critical personnel.

Preparing Your Technical Environment

While many of the activities required for a successful upgrade project involve end users and net change for the applications, you must also manage the changes to your technical environment carefully.

Tip #16—Evaluate Your Architecture

There are several key technological decisions to make that will affect your project. Changing any part of the architecture increases the complexity of the upgrade project, and careful planning is required to determine when to make this change as well as account for the technical work required. If you are not planning on changing architecture (although it may be mandatory for you to change your architecture depending on the version of the applications you are on currently), it is important to clarify this throughout your organization and create consensus to minimize disruptions. You should plan to complete a full performance test prior to the go-live date. This action will better allow your team to tune the system, getting all you can from your available resources and minimizing performance-related issues at go-live.

It is imperative that these assessments be made early on to remove uncertainty and allow the project team to focus on other upgrade related details.

- **Platform:** Most upgrading customers choose to remain on their current hardware, operating system, and database architecture through the upgrade. However, many customers take advantage of the upgrade timeframe to upgrade hardware and transition to the latest support version of the operating

system and other third-party software. If your requirements include considering a change in this area, it is vital that this decision be made early on as the platform often drives most, if not all, of the software utilized.

- **Middleware:** One of the key decisions is which middleware platform you will use. Oracle E-Business Suite supports Oracle Fusion Middleware as well as Oracle Application Server 10*g*. In choosing your middleware, be sure to understand the licensing requirements early to ensure that contractual issues will not become a barrier as the project moves forward.

- **Nonproduction Hardware**: It is important that all of your testing environments are adequate for handling the anticipated testing loads. We often concern ourselves only with the production environment and assume that performance is not important in a test environment. Bad performance during critical phases of testing can not only provide users with a bad experience, but can also affect the upgrade schedule by hindering completion of testing and delaying system deployment.

Tip #17—Calculate New Hardware Sizing

Given the potential changes to your current system configuration, it is absolutely vital to get an accurate sizing for your new architecture. The combination of expanded Oracle E-Business Suite product functionality, technological change, anticipated changes in the way you use the applications, and possible implementation of new modules could all impact sizing requirements for the upgraded solution.

Accurate sizing information will help you decide whether you can reuse current hardware, need to increase hardware resources, or should consider upgrading one or more of your servers. Similarly, sizing considerations are important whether or not you intend to upgrade in place (with potential reuse) or switch to a new hardware platform during the upgrade process. Performance and load testing can help determine if the hardware is adequate to support your production requirements.

Tip #18—Identify Custom Code and Scripting

Any custom code integrated with Oracle E-Business Suite may be impacted during an upgrade. It is important to not only identify any custom code but also track the progress of any retrofit efforts during the project. You need to identify the code, who owns the code, and its status.

During the original implementation of Oracle software, any customizations should have been registered as a custom application using the System Administrator responsibility. A supporting directory structure on the application server should have also been created at this time. All customizations registered as custom applications will be protected from being overwritten during the upgrade process. If a custom application was not used for some or all of the current customizations, perform this step prior to initiating the upgrade.

All interfaces, form customizations, descriptive flexfields, and customized reports will require extensive testing to ensure that they have not been affected by changes to tables or APIs in the upgraded software. Custom responsibilities and menus must be reviewed and potentially updated as well. In some cases, customizations can be removed following an upgrade if new features and functionality satisfy the business requirements previously met with the custom code.

Tip #19—Defragment and Reorganize Your Database

From a general database perspective, there are a few actions that can be completed to assist the upgrade project. To optimize the efficiency of the system as you upgrade, you should defragment and reorganize the database to the greatest extent possible beforehand. Your database administrator should be able to use current database management tools to accomplish this goal.

Tip #20—Study and Adhere to Current Minimum Technical Requirements

A critical step in ensuring success is adhering to the technical requirements for your system. This applies to the release currently in production as well as the release to which you are moving. Make sure that you review these requirements early in the project to ensure that you have the right components and understand any updates or changes and how they will affect your upgrade plan.

Current information on minimum technical requirements can be found in the Certify section of Oracle*MetaLink*.

Installing Your New Release

Installing the new solution properly is a critical component of the upgrade process.

Tip #21—Verify Your Installation

After installing the new Oracle E-Business Suite solution, you should complete an inventory check to confirm that all components were installed correctly and are behaving properly. Details on the installation process can be obtained on Oracle*MetaLink,* and install documentation should be explicitly followed to minimize potential issues. Once all aspects of the installation are confirmed, the process can continue.

Tip #22—Get Code Current

In addition to the basic installation and upgrade steps, it is critical to get "code current" in the new environment before you invest in the testing, configuration, and validation associated with going live. This process requires the most current aggregate fixes to be applied, such as Consolidate Upgrade patches, recommended patches, and so on. Whether or not you install these fixes to the system early in the project is a significant predictor of project success. The best-run and most successful projects do this early in the project, right after installing and upgrading the database.

Upgrading Your Data

Once the system is installed, you should turn your attention to data considerations. This step is a critical one in your upgrade success, and often the most time-sensitive.

Tip #23—Minimize Application Data to Upgrade

There are several steps to take to prepare your application data for the conversion. The first step is to minimize the amount of data you need to upgrade. If you have a defined archiving and purge strategy for your data, be sure to apply it before the upgrade. If a defined data strategy does not exist in your organization, strongly consider implementing one.

Tip #24—Test with a Copy of the Production Database

Converting your data accurately and efficiently depends on the quality and makeup of the data itself. Working with a current copy of your production data will give you valuable information about how the testing process should be structured as well as how long it will take to complete. Typically, your first conversion will be the longest and the most difficult.

As you progress through the upgrade project, continue to work with accurate, current data, taking a fresh copy as directed in your upgrade path documentation. This consideration not only ensures the highest data quality, but will provide more accurate upgrade activity time estimates during performance testing.

Tip #25—Complete Parallel Batch Testing Between a Copy of the Old System and an Upgraded Second Copy

Testing investments can be reduced by making two copies of the production database and then upgrading one. Data can then be staged either through limited data entry or through batch input. Batch processes can then be run both in the old and new copies and the data/results analyzed either through query or production reports. The results can be compared electronically using compare utilities.

Tip #26—Leverage Existing Test Scripts and Plans

To prepare test scripts for use during the testing cycles, begin with the test scripts utilized during the original implementation and augment these to include testing of the new features and functionality. Also consider any modifications needed for process flow changes related to the upgrade.

If these materials do not exist from the original implementation or previous upgrade, create them and store them in a library. This material can save significant time in preparing for upgrade testing.

Tip #27—Choose the Number of Test Upgrades and Functional Testing Cycles

Successful upgrade projects test the data conversion multiple times. The number of tests will depend on the complexity, volume, and success of the process.

From a functional standpoint, you will likely want to run 4–5 distinct test cycles, including one to three conference room pilots (CRPs), a system integration test (SIT), and a user acceptance test (UAT). Each of these test cycles should correspond to a separate test build. From a technical standpoint, addition builds are useful to practice the upgrade, tune the process, and collect timings for the production upgrade weekend.

This practice instills confidence in the accuracy of the final conversion timeframe. Testing after your first successful conversion will help you prove repeatability in the process.

Tip #28—Perform Index Management

There are two main considerations regarding indices for accelerating your conversion.

- First, ensure that the indices that are used by specific conversions, including table conversions, are present during the upgrade process. If you have not deleted any indices on your system, they will be present by default.

- Second, there are some situations where you may want to limit the amount of indices available during a process. This is an advanced consideration, and most customers will not need to weigh this factor. However, in a complex upgrade, particularly if you are also changing platforms and converting to Unicode, you should consider whether it can help your project.

Training

While many of your team's existing skills will serve you well in your upgrade project, it is extremely important to provide training on the new features, business processes, and other changes, to help your staff become more efficient and effective with the new version.

Tip #29—Train End Users on the New Solution

When you first implement the system, your end users must be trained from the ground up to use the new application solution. However, during your upgrade, you will likely have experienced users who are already familiar with the basics. This fact can both assist and impede your upgrade project effort. Your end users, most importantly those who will be testing the system, must have good information about how the resulting solution will be different—that is, whether the changes are functional or technical in nature. These considerations will prevent issues from being reported that result from misunderstandings, and better position overall acceptance of the new solution.

Applicable training can be located on the Oracle University Web site.

Tip #30—Get Specific Technical Training

The project team and support team must be proficient in the new technologies introduced in the latest release. Team members must also understand the new architecture and performance best practices. An assessment is recommended to reconcile the skills needed to support the development and maintenance of the new release. This consideration is especially critical for a successful upgrade initiative.

Applicable training can be located on the Oracle University Web site; additionally, information on training offerings and available Webcasts can be found on Oracle*MetaLink*.

Tip #31—Optimize Training Processes

One of the best ways to reduce the number of issues you have to track, research, and resolve is to train your users at an optimal time in the upgrade process. Although many of the core functional and administrative business processes are similar between releases, training will give your users the information they need to distinguish true issues from intended changes. For this reason, the timing of this functional training is important. While you may want key users to be trained early on to give input to the project and assess impact, most users prefer to be trained closer to going live on the new system so they don't have to remember what they have learned over a long period of time without being able to apply this knowledge.

Post-Upgrade Activities

Once the core technical upgrade has been completed, there are several additional steps to ensure success.

Tip #32—Secure Functional User Buy-In

Functional validation of the system is a key task. Most projects use functional users, away from their main responsibilities, to accomplish this objective.

Though it may be self-evident, if you have functional users complete testing, they must see the value of the process and share the project goals to complete the task effectively. Typically, these resources are setting aside important tasks to participate in the upgrade initiative, so take the time to solicit both management and individual cooperation. Once this cooperation is achieved, ensure you are collectively allocating enough time to complete a thorough testing cycle.

Tip #33—Testing Scope

A comprehensive testing effort is one of the key steps to finishing the upgrade and going live on the new release. As such, it is important that you consider the testing element of the upgrade as a major software update. Typically, a full, integrated test is performed that includes user acceptance and performance testing, and exercises all the business processes the organization will use. You may choose to use automated testing tools; in most cases, this automated approach should be augmented with human testing as well.

Tip #34—Deciding to Go Live

Ultimately, the decision to start running the business on the new solution must be made internally, and taken seriously. As you approach the milestone of a new Oracle E-Business Suite solution, make sure that the team has enough information to enable a defensible "go" or "no go" decision to be made. The go live checklist created earlier in the upgrade process should be leveraged to verify that the success criteria have been achieved during the project.

Make sure that all affected groups from both business and IT are represented in this decision. If you have a formal steering committee, this will be the appropriate decision-making body. If for some reason there is no steering committee, call a meeting for this purpose, gathering input from the stakeholders ahead of time and fostering the communication that will allow for an informed and broadly supported decision.

Tip #35—Update User Procedure Manuals

If your company has a set of standard Oracle operating procedures documented in a manual for end users to reference during their daily work, be sure to update this documentation as required.

In the current and emerging regulatory environment, it is important to ensure that your compliance requirements are met.

Upgrade Tools

Oracle provides some tools to assist with both your upgrade and the subsequent maintenance. Two of the most popular tools commonly used by Oracle E-Business Suite users are the Maintenance Wizard and OAM (Oracle Application Manager). A fair bit of literature on these topics is available on Oracle*MetaLink*. The following make good starting points:

- Note 405263.1—Maintenance Wizard FAQ

- Note 352235.1—OAM Usage and Navigation

- Note: 352843.1—How to Run a Patch Impact Analysis in OAM

Oracle Fusion

The transition to the next generation of applications is a journey. It is a worthwhile journey that you should undertake if and when your business needs warrant it. The course for this journey has been set, it can be started today, and it involves deeper delivery of the benefits in three key focus areas: greater business insight, adaptive business processes, and superior ownership experience. Oracle's investments are focused in these areas, and all future releases of our applications will raise the bar in all areas. In our discussions, the preponderance of feedback from business managers and users of enterprise software falls into these three categories.

As such, our investments in these three areas have resulted in substantial benefits with the delivery of our major release, Oracle E-Business Suite Release 12, in 2007. Beyond this major release and future Oracle E-Business Suite application releases under the Applications Unlimited commitment, the final step to a single, convergent, next-generation applications product line will embody the results of our design decisions and unwavering focus in these areas. The convergent product line will embed business intelligence closer to the heart of the system, so that users can attain greater business insight that is presented in the context of a workflow for decision-making. Oracle's investment in a service-oriented architecture, done right, with appropriate degrees of flexibility in how processes are configured, will eliminate the proverbial business/IT divide. Our holistic approach to reducing your total cost of ownership assures you that we are improving every aspect of your experience with our software—installation, patching, upgrading, maintenance, and end-user productivity.

Additional Resources

The following collateral resources are provided for further information on upgrading your Oracle E-Business Suite applications:

- Note 399362.1—Oracle Applications Release 12 Upgrade Sizing and Best Practices

- Note 225165.1—Patching Best Practices and Reducing Downtime

- Note 734025.1—Using a Staged Applications System (APPL_TOP) to Reduce Patching Downtime in Oracle E-Business Suite Release 12

- Note 807937.1 - Oracle E-Business Suite Release 12.1 Information Center - Upgrade

Conclusion

As part of Oracle's commitment to Applications Unlimited, Oracle E-Business Suite continues to evolve, offering greater value and providing new advantages for your business. Upgrading Oracle E-Business Suite is key to realizing the maximum return on your Oracle investment.

Each organization must evaluate the costs, risks, and rewards of an upgrade in the same way it would evaluate a new business proposal. This Oracle Consulting white paper outlines best practices tips to enhance your upgrade project's success and value to your organization.

Oracle Consulting is ready to help you analyze, plan and execute an Oracle E-Business Suite application upgrade, in a lead or supporting role, as your organization desires. Tight integration across Consulting, Development, Support, Education, and Global Delivery puts the entire Oracle team behind your success.

The following graphic presents the standard upgrade process at a high level:
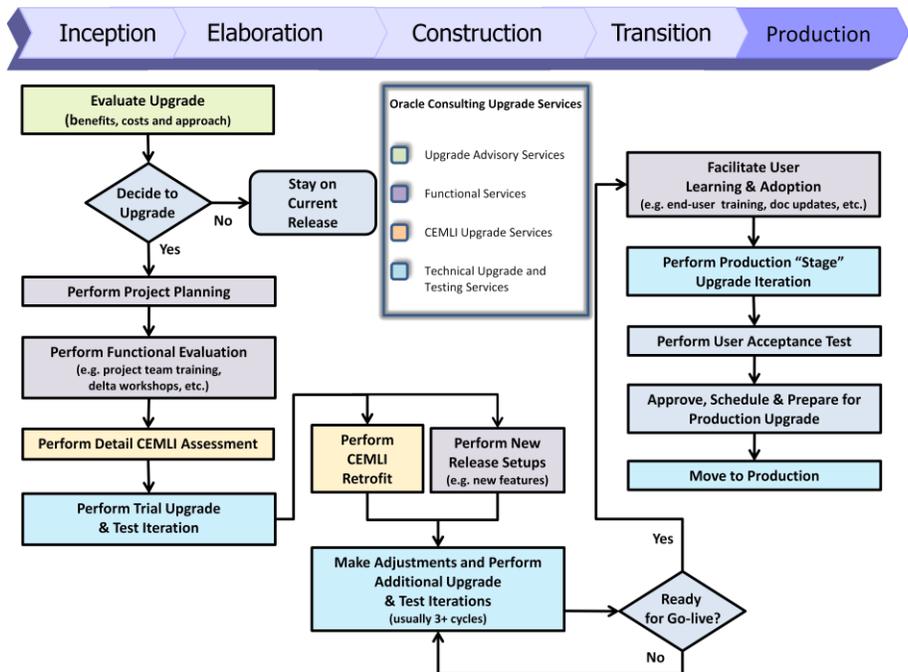
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Hardware and Software, Engineered to Work Together