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Peoplesoft Enterprise Change Assistant's Efficiencies

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PEOPLESOFT ENTERPRISE CHANGE ASSISTANT'S EFFICIENCIES

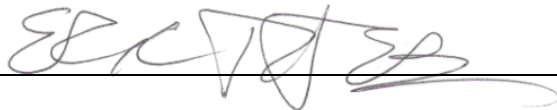
A THESIS

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TO THE DEPARTMENT OF INFORMATION TECHNOLOGY
OF THE SCHOOL OF COMPUTER & INFORMATION SCIENCES
OF REGIS UNIVERSITY

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF MASTER OF SCIENCE IN
INFORMATION TECHNOLOGIES MANAGEMENT

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Abstract

This document examines the efficiencies of the PeopleSoft Enterprise Change Assistant (ECA) in performing upgrades to the PeopleSoft Enterprise software applications. The ECA tool, increases quality of upgrades through the reduction of manual steps and, in doing so, limits risk of manual errors. The PeopleSoft Enterprise software upgrade process is a complicated and time-consuming process. Because the PeopleSoft applications are business critical systems, the upgrade of the PeopleSoft applications needs to be performed in a careful and timely manner. The PeopleSoft Enterprise Change Assistant was developed to automate many of the processes involved in the upgrade. It provides a means for applying PeopleSoft Enterprise software updates in an efficient manner, reducing down-time and minimizing the chance for human error. This study will evaluate the efficiency of the PeopleSoft Enterprise Change Assistant by measuring an upgrade process manually and comparing it with the time involved in performing the same upgrade process with the Change Assistant. While there is some set-up time and a learning curve in using the tool, the execution time savings in a small upgrade is realized and the time savings on a large upgrade can be quite considerable.

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Thanks to my wife, Valerie, for supporting me in my educational endeavors. You are my inspiration in all that I do. I love you.

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Chapter 1 – Introduction

Emerging from Pleasanton, California in 1987, PeopleSoft Inc. became a leading developer of enterprise software. By the early 2000s “some of the world's leading organizations were PeopleSoft customers, including Visa U.S.A. Inc., Pepsi-Cola Co., Quaker Oats Co., Amazon.com, and AOL Time Warner Inc. Government agencies and educational institutions also used the company's products” (Net Industries, 2011).

In 2003, PeopleSoft bought J.D. Edwards, a smaller software rival for \$1.5 billion. This purchase made PeopleSoft the 2nd largest software company in the Enterprise Resource Planning (ERP) software and services, which includes HR, Financials, SCM, Manufacturing etc. (Associated Press, 2003).

In December of 2004, Oracle purchased PeopleSoft, acquiring its 12,750 customers, for \$10.3 billion (Margaret Kane and Dawn Kawamoto, 2004). This buyout did not bring about the end of the PeopleSoft applications, simply a new ownership. Under Oracle, the PeopleSoft applications continued to be developed with enhancements to the current versions (PeopleSoft 8) and the development of new versions (PeopleSoft 9). According to Oracle’s website, the enhancement to PeopleSoft applications reflects their loyalty to the PeopleSoft customer base. “As we continue to provide significant and compelling enhancements to PeopleSoft products, this demonstrates Oracle's ongoing commitment to the PeopleSoft product family” (PeopleTools Strategy, 2010).

The PeopleSoft Enterprise Change Assistant plays a key role in applying software updates to the PeopleSoft applications. This study will provide empirical and anecdotal evidence of the increased efficiencies and quality of a PeopleSoft upgrade when the PeopleSoft Enterprise Change Assistant (ECA) is used over the alternative non-automated upgrade method.

Relevance of the Study

Organizations that use PeopleSoft will find they will need to perform occasional upgrades to the application. Much like the implementation process, the upgrade process is very complicated and challenging. “A common misconception new PeopleSoft customers have is that installing a new software release is easy” (Stephens, 1997, p.161). Furthermore, upgrades will be performed multiple times throughout the life of the application. A journal from the Hawaii International Conference on System Sciences states,

“ERP life cycle-wide management and support are ongoing concerns rather than a destination. The preimplementation, implementation and post-implementation stages continue throughout the lifetime of the ERP as it evolves with the organization...Following initial implementation there are subsequent revisions, reimplementations and upgrades that transcend what is normally considered system maintenance” (Chang, 2005).

The IT team at Cornell University, for example, performed an upgrade in 2006. They began their \$3 million PeopleSoft upgrade project in August of 2005 and it was implemented in their production environment in August of 2006. The upgrade work required 19,000 hours of work from Cornell's IT staff time and 15,000 hours of work from their other departments. They performed 731 steps in the final production implementation, which needed to be completed within 72 hours to minimize interruptions to the university's business (Steele, 2006).

The upgrade process involves making updates to the entire collection of PeopleSoft application components. This includes coordinating numerous changes on the database, web servers, application servers, file server, and batch process servers. Furthermore, PeopleSoft customers usually have customizations to the application that they will need carried over to the new environment. Beside the customer specific modifications, there are customer added bolt-on changes to the application that also need to be carried into the newly upgraded environment. These customizations and bolt-on components of the application need to be reapplied to an upgraded environment. These customizations are not upgraded automatically via the PeopleSoft Enterprise Change Assistant template.

The upgrade process is done in several iterations against multiple test environments, prior to implementing the changes in production. This allows the upgrade team to practice making the changes and to verify that the application works properly in the test environments before making updates to the production environment.

In order to coordinate and automate many of the steps in the complicated upgrade process, PeopleSoft developed the Upgrade Assistant. The Upgrade Assistant (PeopleSoft, Inc., 2000), a predecessor of the Change Assistant (PeopleSoft, Inc., 2004), was introduced in 2000 with PeopleTools 8. The Upgrade Assistant was developed to automate steps within the PeopleSoft upgrade and patch processes (Kurtz, 2004). The Upgrade Assistant evolved into PeopleSoft Change Assistant. The Change Assistant was released in 2004 with PeopleTools 8.44 as part of PeopleSoft's Total Ownership Experience program (ERP Associates, Inc., 2006). Figure 1 depicts a timeline of some key PeopleSoft events.

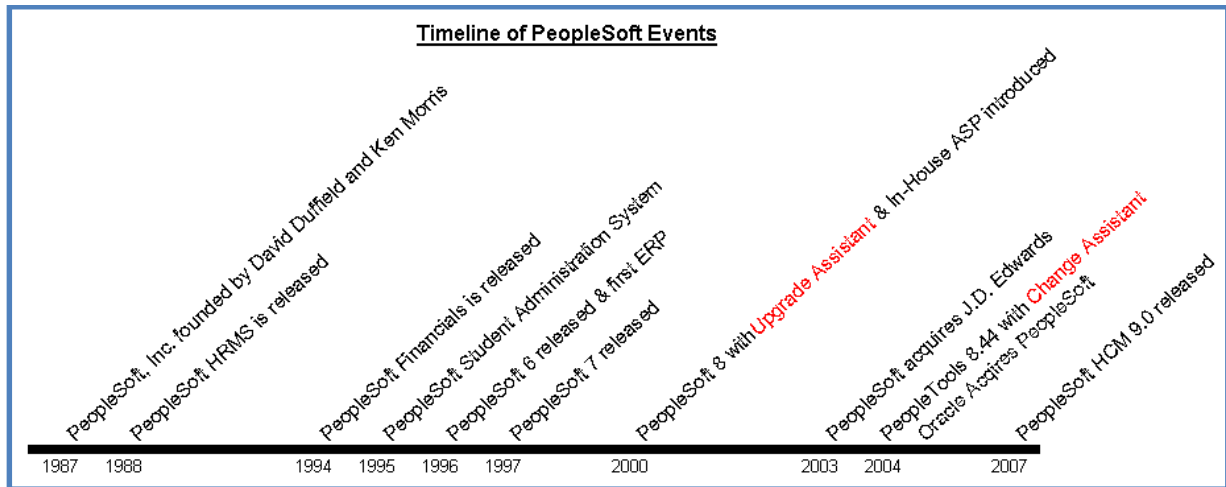


Figure 1. Timeline of PeopleSoft Events (Asgaonkar)

In 2003, PeopleSoft acquired J.D. Edwards. At this time, the products that were formerly PeopleSoft were now referred to as “PeopleSoft Enterprise” and the J.D. Edwards software suites were renamed as well. J.D. Edwards OneWorld software was renamed Enterprise One and the J.D. Edwards World software was renamed PeopleSoft World. At the same time as the renaming of the J.D. Edwards products, the Change Assistant was modified to support the PeopleSoft EnterpriseOne and PeopleSoft World suites. Subsequently, when Oracle purchased PeopleSoft in 2004, the J.D. Edwards product lines were renamed, yet again, to keep the distinction of the J.D. Edwards suits separate from that of the PeopleSoft Enterprise software. Figure 2 is a current view of the My Oracle Support site showing that the Change Assistant tool is still a key utility for updating Oracle’s J.D. Edwards EnterpriseOne and J.D. Edwards World suites. While this study is focused on the PeopleSoft Enterprise Change Assistant, this notation underscores the significance of the Change Assistant tool. It also demonstrates that some of this study may be of interest to those using Oracle’s J.D. Edwards products.

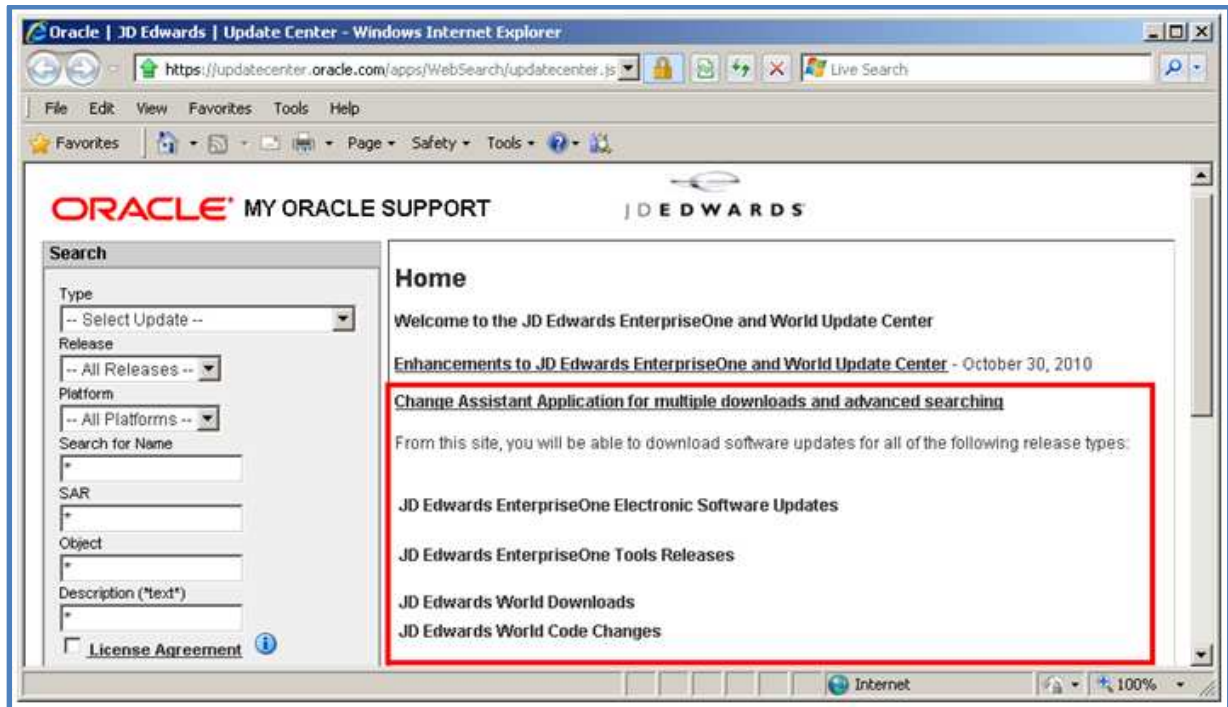


Figure 2. Change Assistant for JD Edwards (Oracle)

The PeopleSoft Enterprise Change Assistant (Oracle Corporation), formerly known as Change Assistant, supports versions 8 and 9 of the following Oracle software applications:

- PeopleSoft Enterprise Human Capital Management (HCM)
- PeopleSoft Enterprise Financials/Supply Chain Management (FSCM)
- PeopleSoft Enterprise Customer Relationship Management (CRM)
- PeopleSoft Enterprise Campus Solutions
- PeopleSoft Enterprise Portal.

In addition to these applications, the Enterprise Change Assistant also supports updates to the PeopleSoft Enterprise PeopleTools technology layer starting at version 8.44.

This study is especially important because the PeopleSoft Enterprise Change Assistant has become the model for the new Upgrade Assistant for Fusion, the newest suite of Oracle applications. For technical leaders in organizations that are upgrading their PeopleSoft applications, or migrating from PeopleSoft Enterprise to Oracle Fusion, understanding the features and benefits of the PeopleSoft Enterprise Change Assistant will be a valuable study.

Hypothesis

The PeopleSoft Enterprise Change Assistant is a tool for the PeopleSoft administrator that includes some extremely helpful features which help automate and simplify the process of installing software patches, updates and upgrades, reducing the manual effort and time required for application updates. While the PeopleSoft Enterprise Change Assistant helps to increase efficiency during the upgrade application, some users have found it difficult to set up and use, questioning the value of the tool. While there is a slight learning curve with the tool, once the configuration is understood, the setup is not very difficult. “Unfortunately the setup isn't very intuitive...The biggest part about setting up Change Assistant is getting the PeopleSoft Environment Management Framework configured” (Change Assistant, 2009). Knowing some of the main issues encountered with the PeopleSoft Enterprise Change Assistant and understanding its capabilities will help PeopleSoft administrators minimize the manual processes in PeopleSoft upgrades, making the process more efficient. This study will set forth to prove the PeopleSoft assertion that the PeopleSoft Enterprise Change Assistant increases the efficiency of the upgrade process by reducing the amount of time to apply an upgrade by at least 25%. Additionally, this study will provide evidence of increased quality through a significant (> 50%) reduction of manual steps. The reduction of manual steps translates into shorter execution time and a reduced opportunity for human error in the process as we will see by comparing a manual upgrade against an upgrade using the PeopleSoft Enterprise Change Assistant.

Chapter 2 – Review of Literature and Research

There is a great deal of documentation on the risks, challenges and complexities of implementing ERPs. An Enterprise Information Systems journal entry by D. L. Olson and F. Zhao provides the following account:

Although ERP systems offer a great deal, implementation success is far from assured. Statistics show that more than 70% of ERP implementations fail to achieve their corporate goals and the number of horror stories about failed or out-of-control projects is large (Zhao, 2007).

While the implementation process is different than an upgrade, in some respects, there are many similarities. The upgrade process shares much of the challenges, complexity and risks associated with an implementation. As one study, *The Impact of Upgrades on ERP System Reliability*, states, “Constant upgrading of Enterprise Resource Planning (ERP) systems is necessary, but can cause new defects.” (F. Urem, 2011). Upgrading the PeopleSoft applications share the same complexity and risks of other ERP applications.

“It is common for the misinformed to claim that PeopleSoft upgrades itself: ‘You just run a program and it will update everything automatically.’ That is not remotely true and PeopleSoft does not claim that it is” (Implementing PeopleSoft Financials, p.161). According to Zanett Public Sector Solutions, a company that provides ERP services for government agencies, “The PeopleSoft Upgrade Assistant improves the quality of upgrades, reduces errors, and shortens time to upgrade, ultimately lowering the total cost of ownership.” (Solutions, 2011).

While a tool like the PeopleSoft Upgrade Assistant will not eliminate errors, nor eliminate the role of an upgrade specialist in the process, it can certainly help provide an increased quality. “New technology can be used skillfully to increase skilled practice and to

produce more reliable human-machine systems...Studying and modeling joint human-machine cognitive systems in context is the basis for skillful as opposed to clumsy use of the powers of technology.” (Parasuraman, 1996). Automation can provide an increased level of reliability when used by a skilled upgrade specialist. “Automation offers significant advantages...and it is more repeatable and compliant than humans are, and therefore less susceptible to traditional human error.” (Schutte, 1999).

PeopleSoft Architecture

In order to recognize the challenges of the PeopleSoft upgrade, it is important to understand the various components of the PeopleSoft architecture. The PeopleSoft architecture encompasses the hardware, software and the database components of the application. While PeopleSoft installations may vary, somewhat, in their set-up, they will share these key similarities in their PeopleSoft Architecture. The Environment Management Framework (EMF) provides a snapshot of configuration and setup information about the architecture components that comprise the PeopleSoft system. The Enterprise Change Assistant uses the EMF to carry out commands remotely on different machines within a network.

All PeopleSoft upgrades involve assessing the various application, database and server components of the environment being upgraded, as well as reviewing of the updates that are available, provided and/or required. Besides knowledge of the target environment, this assessment of the available updates requires searching Oracle’s site for updates and deciphering technical documentation that can be up to 900 pages in length and can contain hundreds of steps, some of which may or may not be required to run, depending on the customer’s environment. This Enterprise Change Assistant (ECA) guides the administrator through the preparation and the

execution of the upgrade process, automating a great deal of what would have been manual work.

The Enterprise Change Assistant has been successful because of the many valuable features that it offers in guiding the upgrade process and automating upgrade process. Its features support the various steps in the main phases of the application maintenance process:

- 1) Search – The uploaded environment is used by the Enterprise Change Assistant to search Oracle’s site for available maintenance packages.
- 2) Download – The desired maintenance packages are downloaded from the Oracle site via the Enterprise Change Assistant tool.
- 3) Apply – This is the biggest advantage to the tool. It is very efficient at executing the steps required in the upgrade process.
- 4) Migrate Customizations – The change assistant allows PeopleSoft users to migrate their customizations to the application.

This 4-step approach (Applying Application Updates, 2009) nicely breaks up the process into phases that can help us see the involvement of the Enterprise Change Assistant tool.

The structure of the EMF enables the Enterprise Change Assistant to gather information about the PeopleSoft environments installed at a customer’s site. The Enterprise Change Assistant also uses the EMF to involve agents in certain steps of the upgrade process. There are three types of upgrades during which the Enterprise Change Assistant does not use the EMF to carry out commands. For PeopleTools patches, PeopleTools upgrades and Application upgrades, the hub does not have to be up, since the Enterprise Change Assistant will work independently of the EMF. This study is specific to the upgrades that do use the Enterprise Change Assistant.

Literature & Research

Oracle's claim of a 25 to 40 percent reduction in execution time (People Soft, 2004) will be tested first-hand because there were no documented timings available. In an attempt to find a documented timing comparison, Oracle's support site was searched, a general internet search was performed, a variety of vendor and non-vendor published documents were checked and, finally, a support case was opened with Oracle to request some type of comparison timing to corroborate the efficiency claim surrounding the Enterprise Change Assistant.

The research for a timing comparison included the review of documentation from a variety of sources on the Enterprise Change Assistant. These sources included:

- My Oracle Support! <https://support.oracle.com> - Oracle's documentation and support site. The My Oracle Support site is intended for use "by authorized Oracle customers, partners, and employees." While the site offers a wealth of information on the PeopleSoft Enterprise Change Assistant, it is maintained by the vendor and, therefore, biased. According to the vendor's claims, the Enterprise Change Assistant's automation reduces the time to upgrade to a new software release "by 25 to 40 percent" (People Soft, 2004). In attempt to corroborate this time savings, Oracle was contacted and asked to provide a concrete example of the time savings. Oracle, however, responded to #SR 3-2766119721 on My Oracle Support (Oracle, 2011) that they did not have documented timings to provide. "No statistics or studies, just personal experience applying tax updates before and after the release of Change Assistant" (Oracle, 2011).

- Customer & Consultant Documentation - Documentation from various consulting companies and organizations that have upgraded PeopleSoft applications. Project plans and issues encountered were used to evaluate the features of and issues with the PeopleSoft Enterprise Change Assistant. These sites include information made available by the University of Utah (www.acs.utah.edu) and Cornell University (www.news.cornell.edu).
- PeopleSoft User Groups and Community sites. These collaborations offer candid opinions and advice about the Enterprise Change Assistant from PeopleSoft Administrators of various levels of expertise. Some of the sites used as reference for this research include <http://www.toolbox.com>, <http://pswisdom.com>, <http://community.psoftpros.net>, <http://changeassistant.blogspot.com> & <http://www.peoplesoftfans.com>.
- PeopleSoft Admin Sites – Sites developed by PeopleSoft administrators and technical development specialists. These sites include commentary and advice from the PeopleSoft professionals who are experts on the PeopleSoft maintenance work. These sites include <http://psadmin.wordpress.com/about/> and <http://peoplesoft-admin.rakeshparwal.com>.
- Journal Articles that assess the quality benefit of automating manual processes. These resources were used for identifying the benefits of process automation. The Journal of Software Maintenance and Evolution publishes articles on the processes involved in changes to existing software and implementing system changes.

Since there were no comparison timings readily available from Oracle, the Enterprise Change Assistant's efficiency will be measured through original research conducted by the author in applying an update manually and comparing the time it takes to apply the same update via the Enterprise Change Assistant.

Upgrade Sample

A tax update to the HRMS application will serve as a sample for this research. A tax update was selected for comparison purposes because of the following reasons:

- It is one of the smaller updates, which will allow for a beginning-to-end comparison within a minimal amount of time.
- It contains a good representation of the variety of steps within a larger upgrade.
- While they do not advise it, a manual tax update is supported by Oracle (Oracle, 2011).
- Some Certified PeopleSoft Administrators perform manual tax updates (PeopleSoft Discussion Group, 2006).
- Due to regulatory requirements, it is a more common type of update by businesses than a PeopleTools or PeopleSoft application version update.

Chapter 3 – Methodology

The efficiency of the PeopleSoft Enterprise Change Assistant will be measured by counting the automated steps vs. manual steps as well as by measuring the elapsed time of an actual update using the automated vs. a manual method. Tax update Tax Update PRJ856195 will be applied to the PeopleSoft Enterprise HCM 9.0 application. The timing comparison will be made as it is applied to two separate, but identical, databases.

In order to measure the Enterprise Change Assistant tool's efficiency in performing an upgrade, a test will be done to compare the timing of a series of processes when Enterprise Change Assistant was used and compare that timing to the timing for the same processes when run manually. While this tax update limits the scope of the timing comparison for this study, it is representative of the overall efficiency of the Enterprise Change Assistant in updates to the PeopleSoft Enterprise applications.

The main test of the Enterprise Change Assistant's efficiency is measuring an actual reduction in the time it takes to implement a change. The increased quality of the upgrade process with the PeopleSoft Enterprise Change Assistant tool will be measured by error avoidance, quantified by the reduced opportunity for human error, the consistency between iterations from test environments into production and by the error handling capabilities of the tool.

Chapter 4 –Project Analysis and Results

Tax Update Comparison

A test was done to compare the timing of a series of processes when Enterprise Change Assistant was used and compared to the timing for the same processes when run manually. The change used to perform this test was a tax update on the HCM application (Oracle, 2011) (see Appendix A for a detail of each step). For this update, there were 63 steps. In all, 56 of the 63 steps were automated by the Enterprise Change Assistant. That translates into an 89% of processes that were automated, leaving only 11% of the steps requiring manual intervention (see Table 1). With additional set-up, some, if not all of the 11% of the manual steps could have been set up as automated processes if additional time was spent on doing some customized set-up work. The inclusion of a customized set-up step could take as little as a few seconds, such as the insertion of a setdbnam.dms (a commonly used PeopleSoft PeopleTools program) step, or longer such as writing a customized windows batch file that could replace a manual step for site-specific manual steps. The manual processes that were not automated included inserted steps, steps that required tasks to be performed by another area, steps that required an assessment of the output and steps that would have taken a considerable amount of time to fully automate. For example, the copying and compiling of files to the OS390 could have been automated, if some customization was done, such as creating batch files to perform these tasks. This type of customized automation could take a few minutes for someone who is skilled at writing Windows batch files and knows the syntax of the DOS command line, or longer depending on the technical skills and experience of the upgrade specialist.

Table 1. PSECA vs. Manual Tax Update PRJ856195

PSECA vs. Manual Application of Tax Update PRJ856195		
	Time in Minutes	Number of Manual Steps
Updates with the PeopleSoft Enterprise Change Assistant	10	7
Manual Updates	20	63

The manual vs. automated execution of this tax update shows that the PeopleSoft Enterprise Change Assistant does reduce the time it takes to perform an upgrade. There are a total of 63 steps in Tax Update PRJ856195. Of those 63 steps, 56 were automated and 7 remained as manual. This translates into a 89% automation of this smaller upgrade. The manual process took 20 minutes, while the Enterprise Change Assistant took only 10 minutes. That is a 50% time savings in application down-time during the upgrade process with the Enterprise Change Assistant!

This tax update is a smaller change with less, but similar, process types as a larger change. Due to the amount of effort involved in performing an upgrade, this study is limiting its manual to automated timing comparison to a tax update. However, in order to put this time savings in perspective, the automated steps of a larger upgrade were compared the total number of steps in the larger upgrade. For an application upgrade of the PeopleSoft Enterprise FSCM application from v.8.9 to v.9.1, there are a total of 257 steps. Of those 257 steps, there are 176 steps that are delivered as automated steps in the PeopleSoft Enterprise Change Assistant template. Of those 257 steps, 176 were automated and 81 remained as manual. This translates into a 68% automation of this larger upgrade. Based on this sample, there may be a smaller percentage of automated steps in a larger upgrade and it may not be that a similar 50% time savings would be realized in a larger upgrade, but the time savings can still be considerable.

While automation of this small-scale update may not translate into much savings, the real time saving can be seen in larger upgrades. As with the Cornell University, for example, their 72 hour upgrade could have taken up to twice as long if all of the 731 steps were performed manually. Additionally, their \$3 million PeopleSoft upgrade project could have been more costly if it would have increased their workload beyond the 19,000 hours of IT staff time.

This experiment shows that the Enterprise Change Assistant does reduce the execution time. It also automates the processes, reducing the opportunity for human error and, in doing so, provides a more reliable upgrade process with minimal variation. This provides a consistent outcome in the various iterations of the upgrade process. Because the upgrade template is reused for each of the iterations within an upgrade, it increases consistency of the steps that are being run and it allows the process to be tested. Unlike a manual process that would execute the processes real-time and would, potentially, introduce variations that are minimized by the automated process. This minimization of variations enhances the quality of the upgrade process. “By providing a rich user interface and by automating many of the steps, the administrative tasks involved within an installation, upgrade, or update require less time and effort, all while reducing potential errors” (Virginia).

This reduction of potential human errors by using an automated process is a bi-product of automation and has been noted by other studies. According to Journal of Software Maintenance and Evolution's analysis of commercial software applications, "Our results support the claim that automation has enabled the organization to accomplish more work activities with greater productivity, thereby significantly increasing the functionality of the applications portfolio. Despite the growth in software functionality, the analysis suggests that automation has helped to manage software complexity levels and to improve quality by reducing errors over time."

(Barry, Kemerer & Slaughter, 2007). Based on a PeopleSoft administrator's assessment "the automated process...will decrease the occurrence of human errors" (Venkataraman, 2004). The number of manual steps for the sample Tax Update was reduced from 63 to 7, which is a reduction of 89% of manual processes.

Besides the benefits of automating steps and organizing the work, another benefit of the Enterprise Change Assistant tool is that it helps track the work that has been performed. It produces logs in a consistent manner and makes them readily available via the Template Tree. Additionally, the Enterprise Change Assistant tracks timings as it runs and completes steps. Timings are important, specifically when planning for a production implementation. It is important to know how long the upgrade process will take, so that the production outage is accurately estimated.

The copy of files to the OS390 and the COBOL compile process were not including in this timing, due to the inability to automate this process, without a considerable amount of effort. Had more time been dedicated to the automation of this process, the execution time of the implementation and the risk of human error could have been further reduced. This additional type of preparation would allow the user to maximize the functionality of the Enterprise Change Assistant as well as increase the consistency of the change between the iterations from the test moves to production through the final move to production.

In light of this smaller upgrade, it would appear that the Enterprise Change Assistant did not save any time when the overall timeframe is considered, however, had this been a larger project, the proportion of the time savings during execution time would have been significantly greater. It is also important to note that the key time savings of the Enterprise Change Assistant is at the implementation time, so as to reduce the amount of down-time during an

implementation. The configuration/preparation work does not require the application to be down. The vendor's time reduction claim does not make mention of this preparation work. There are also some other considerations to take into account when evaluating the benefits of the Enterprise Change Assistant tool.

Chapter 5 – Conclusions

The execution time savings in a small upgrade was, in fact, realized in this experiment and, therefore, the time savings on a large upgrade can be quite considerable. The PeopleSoft Enterprise Change Assistant is a very robust and multi-functional tool that is capable of automating over 80% of manual upgrade processes and reducing the execution time for the upgrade process by 50%. The amount of automation and time-savings can vary by the type of upgrade work being performed (i.e. tax update, PeopleTools upgrade, application upgrade). With some up-front set-up and configuration work done in preparation of an upgrade, the PeopleSoft Enterprise Change Assistant can save a considerable amount of time, reducing system down-time, when implementing application upgrades.

Enterprise Change Assistant Limitations and Issues

As the old adage goes, “Technology is great...when it works!” While the Enterprise Change Assistant is a valuable tool in enhancing the efficiency of the upgrade process, when an issue is encountered with the tool, it can bring the productivity to a stop. Timing efficiencies gained can be quickly lost if an unforeseen problem is encountered with the Enterprise Change Assistant. Therefore, it is important to recognize some of the limitations or issues that may be encountered when using the Enterprise Change Assistant.

Based on the author’s experience and in reviewing various issues posted in the My Oracle Support site, Enterprise Change Assistant issues are, generally, one of two types of problems. The first type of problem is an EMF issue. As discussed previously, the Enterprise Change Assistant is dependent on the EMF for certain types of upgrades to determine the DB information and to carry out commands remotely on different machines within a network. The second type of issue is an Enterprise Change Assistant Workstation issue.

In their training presentation on the Enterprise Change Assistant, PeopleSoft identifies four Common Issues with the Changes Assistant. Here is a summary of the issues identified in training documentation as Common Issues (see Table 2):

Table 2. Common Issues with Enterprise Change Assistant (PeopleSoft, Inc., 2004)

Problem	Solution
EMF agent not running	Run EMF agent in the background
EMF agent not connecting to EM hub	Start PIA - or - Make Certain Hub URL is Correct
CA workstation – path not updated	Validate Path
CA workstation – SQL client utility not found	Review search-results.xml

When researching the Oracle support site, there are other types of problems that emerge as frequent Enterprise Change Assistant related problems that are not listed in the Oracle training documentation.

1. No Environments Were Found
2. Error When Uploading Environment
3. Data Mover jobs get “Invalid User ID and Password for Signon”
4. A pre-requisite is required

More details on these issues are documented within the Appendix B.

While the tax update tasks in the experiment took less time to do the tasks through the Enterprise Change Assistant, it took 12 minutes to setup the Enterprise Change Assistant to migrate the project. This does not include the time that it took to set configure the hub. Based on this timing comparison, the execution time for a small project can be cut in half. This confirms the claims that upgrade times can be reduced “by 25 to 40 percent” (People Soft, 2004).

There is, however, some preparation work that must be done up front to configure the Enterprise Change Assistant. In this research experiment, it took 12 minutes to get the Enterprise Change Assistant setup. This setup time was for the configuration of the tool and did not include the addition of any customized automation steps.

Recommendations

This leads to a few recommendations for PeopleSoft customers in light of the observations. First of all, since the tool can automate most of the upgrade steps, it is invaluable to reducing application down-time during the PeopleSoft upgrade process. As with any tool, it requires getting familiar with how to use the tool, both in setting it up and addressing any issues that may be encountered when using the tool. Because the Enterprise Change Assistant is being used by Oracle for the Fusion application, it is important for the PeopleSoft administrator to become familiar with the tool. PeopleSoft customers need to ensure that their administrators are trained on how to use the tool so that they are comfortable using it in the upgrade process. Organizations that use PeopleSoft Enterprise, should ensure that their software administrators are trained on the PeopleSoft Enterprise Change Assistant (see Appendix C for some examples). Oracle has some helpful documentation and they offer training programs as well.

Additionally, PeopleSoft Enterprise customers who are considering an upgrade should make sure that contractors that are brought in to lead an upgrade effort are familiar with the Change Assistant. Details about the Change Assistant would be a good interview question when screening applicants. A contractor who has performed numerous upgrades with the Change Assistant is also a good source of training for PeopleSoft Administrators who may have limited experience with upgrades, applying smaller upgrades that do not require Change Assistant.

Most importantly, customers that are preparing for an upgrade should allocate time in the upgrade schedule to configure and prepare the Change Assistant. The more time that is spent on setting up and testing the Change Assistant, the greater the amount of upgrade processes will be able to be automated. In doing so, businesses that use PeopleSoft Enterprise software should consider increasing the use of the PeopleSoft Enterprise Change Assistant beyond the delivered template for upgrades. The PeopleSoft Enterprise Change Assistant is a very useful tool that can reduce the downtime it takes to install an upgrade, reduce errors introduced by changes and, in turn, save your company some money and provide a more reliable application upgrade process.

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Appendix A

Job softwareupdate.PRJ856195							Change	Application	Manual
Description	Start Time	End Time	Duration	Total Duration	Status	Comments	Assitant	Designer	Process Notes
Plan Your Update									Took 12 minutes to get Change Assistant setup.
Apply Metadata Changes									
Apply Non Managed Metadata									
Import Message	2/10/2011	2/10/2011							Open and log into App designer is included in the timing of this task.
Catalog Definitions	13:41	13:41	0:00:04	0:00:04	Completed			1.5	
Apply Project									Project had XMPL objects. Therefore, the following steps were needed: 1) log into the Source database 2) copy it to a file 3) log into the Target database and copy it from file.
CopyUpdateProject	2/10/2011	2/10/2011							
Deploy Files									
File Type Code: SQR									
CTX910RM_SQR	2/10/2011	2/10/2011							
	13:42	13:42	0:00:12	0:00:53	Completed				

	2/10/2011	2/10/2011				
CTX910RP_SQR	13:42	13:42	0:00:09	0:01:02	Completed	
	2/10/2011	2/10/2011				
CTX910VM_SQR	13:42	13:43	0:00:09	0:01:11	Completed	
	2/10/2011	2/10/2011				
CTX910VP_SQR	13:43	13:43	0:00:11	0:01:22	Completed	
	2/10/2011	2/10/2011				
CTX912R_SQR	13:43	13:43	0:00:09	0:01:31	Completed	
	2/10/2011	2/10/2011				
CTX912V_SQR	13:43	13:44	0:00:12	0:01:43	Completed	
	2/10/2011	2/10/2011				
DDP001_SQR	13:44	13:44	0:00:09	0:01:52	Completed	
	2/10/2011	2/10/2011				
PFRM1042_SQC	13:44	13:44	0:00:08	0:02:00	Completed	
	2/10/2011	2/10/2011				
PRTMREFC_SQC	13:44	13:45	0:00:10	0:02:10	Completed	
	2/10/2011	2/10/2011				
PRTMREFP_SQC	13:45	13:45	0:00:10	0:02:20	Completed	
	2/10/2011	2/10/2011				
TAX910ER_SQR	13:45	13:45	0:00:09	0:02:29	Completed	
	2/10/2011	2/10/2011				
TAX920PR_SQR	13:45	13:46	0:00:10	0:02:39	Completed	
	2/10/2011	2/10/2011				
TAX920US_SQR	13:46	13:46	0:00:09	0:02:48	Completed	
	2/10/2011	2/10/2011				
TAX921PR_SQR	13:46	13:46	0:00:09	0:02:57	Completed	
	2/10/2011	2/10/2011				
TAX921US_SQR	13:46	13:47	0:00:10	0:03:07	Completed	
	2/10/2011	2/10/2011				
TAX922US_SQR	13:47	13:47	0:00:11	0:03:18	Completed	
	2/10/2011	2/10/2011				
TAX923US_SQR	13:47	13:47	0:00:09	0:03:27	Completed	
	2/10/2011	2/10/2011				
TAX930PM_SQR	13:47	13:48	0:00:10	0:03:37	Completed	
	2/10/2011	2/10/2011				
TAX950_SQR	13:48	13:48	0:00:10	0:03:47	Completed	
	2/10/2011	2/10/2011				
TAX960LC_SQR	13:48	13:48	0:00:08	0:03:55	Completed	
	2/10/2011	2/10/2011				
TAX960ST_SQR	13:48	13:49	0:00:09	0:04:04	Completed	
	2/10/2011	2/10/2011				
TAX960US_SQR	13:49	13:49	0:00:09	0:04:13	Completed	
	2/10/2011	2/10/2011				
TAX962PD_SQR	13:49	13:49	0:00:10	0:04:23	Completed	
	2/10/2011	2/10/2011				
TAX962ST_SQR	13:49	13:50	0:00:09	0:04:32	Completed	

TAXMMREF_SQC	2/10/2011	2/10/2011	13:50	13:50	0:00:11	0:04:43	Completed
TAXMREF2_SQC	2/10/2011	2/10/2011	13:50	13:50	0:00:07	0:04:50	Completed
TERYPRNT_SQC	2/10/2011	2/10/2011	13:50	13:51	0:00:10	0:05:00	Completed
VALIDEIN_SQC	2/10/2011	2/10/2011	13:51	13:51	0:00:10	0:05:10	Completed
W2BOX_SQC	2/10/2011	2/10/2011	13:51	13:51	0:00:09	0:05:19	Completed
W2C_SQC	2/10/2011	2/10/2011	13:51	13:52	0:00:10	0:05:29	Completed
File Type Code: COBOL							
PSPCNTAX_CBL	2/10/2011	2/10/2011	13:52	13:52	0:00:11	0:05:40	Completed
PSPPARRY_CBL	2/10/2011	2/10/2011	13:52	13:52	0:00:10	0:05:50	Completed
PSPPARRY_DMS	2/10/2011	2/10/2011	13:52	13:53	0:00:10	0:06:00	Completed
PSPUSTAX_CBL	2/10/2011	2/10/2011	13:53	13:53	0:00:11	0:06:11	Completed
File Type Code: MAINT							
UPD856195_01_DAT	2/10/2011	2/10/2011	13:53	13:53	0:00:09	0:06:20	Completed
UPD856195_01_DMS	2/10/2011	2/10/2011	13:53	13:54	0:00:09	0:06:29	Completed
UPD856195_02_DAT	2/10/2011	2/10/2011	13:54	13:54	0:00:10	0:06:39	Completed
UPD856195_02_DMS	2/10/2011	2/10/2011	13:54	13:54	0:00:10	0:06:49	Completed
UPD856195_03_DAT	2/10/2011	2/10/2011	13:54	13:55	0:00:10	0:06:59	Completed
UPD856195_03_DMS	2/10/2011	2/10/2011	13:55	13:55	0:00:10	0:07:09	Completed
UPD856195_04_DAT	2/10/2011	2/10/2011	13:55	13:55	0:00:10	0:07:19	Completed
UPD856195_04_DMS	2/10/2011	2/10/2011	13:55	13:56	0:00:11	0:07:30	Completed
UPD856195_05_DAT	2/10/2011	2/10/2011	13:56	13:56	0:00:11	0:07:41	Completed
UPD856195_05_DMS	2/10/2011	2/10/2011	13:56	13:56	0:00:10	0:07:51	Completed

UPD856195_06_DMS	2/10/2011 13:56	2/10/2011 13:57	0:00:11	0:08:02	Completed			
Copy File(s) For OS390								N/A
Copy File(s) For OS390			0:00:00	0:08:02	Completed			N/A
Compile COBOL								N/A
Compile Cobol Step Manually			0:00:00	0:08:02	Completed			N/A
Build and Alter								
Build and Alter Task								
Build and Alter Step	2/10/2011 13:57	2/10/2011 13:57	0:00:09	0:08:11	Completed			7
Run Create Tables Script			0:00:00	0:08:11	Completed			
Run Alter Tables Script			0:00:00	0:08:11	Completed			
Run Create Triggers Script			0:00:00	0:08:11	Completed			
Run Create Views Script			0:00:00	0:08:11	Completed			
								Ran SQR for SETDBNA ME and SETABLE SPACE, Created 3 files seperatly, One for the Creates, One for Alters and One for Views.
								The timings for the DBA group to execute these scripts are not reflected in these timings.

Run Create Indexes								
Script			0:00:00	0:08:11	Completed			
Execute File References								
Execute DMS							5	Manually had to update the input file location in each script.
	2/10/2011	2/10/2011						
PSPPARRY_DMS	14:02	14:02	0:00:08	0:08:19	Completed			
	2/10/2011	2/10/2011						
UPD856195_01_DMS	14:03	14:03	0:00:18	0:08:37	Completed			
	2/10/2011	2/10/2011						
UPD856195_02_DMS	14:03	14:03	0:00:04	0:08:41	Completed			
	2/10/2011	2/10/2011						
UPD856195_03_DMS	14:03	14:04	0:01:11	0:09:52	Completed			
	2/10/2011	2/10/2011						
UPD856195_04_DMS	14:04	14:04	0:00:04	0:09:56	Completed			
	2/10/2011	2/10/2011						
UPD856195_05_DMS	14:04	14:04	0:00:04	0:10:00	Completed			
	2/10/2011	2/10/2011						
UPD856195_06_DMS	14:04	14:04	0:00:03	0:10:03	Completed			
Update Package Prerequisites								
Update Package Prerequisites								
	2/10/2011	2/10/2011						
Update Package Prerequisites	14:04	14:04	0:00:02	0:10:05	Completed			
Total times in minutes				10.05			20.5	

Appendix B

Details on Change Assistant Limitations / Issues:

No Environments Were Found

When performing Tax Updates, Bundles and Maintenance Packs, the Change Assistant acts as an agent of the Environment Management Framework. It is at this time that the Change Assistant is entirely dependant on the Hub for supplying the list of environments that are found. However, there are times when the Hub does not show all of the environments within the Environment Management Hub Summary. Generally, the environment that does not show happens to be the one that is currently being updated. This can stop the Change Assistant from being able to apply updates, since it is not able to identify the environment on which to perform the updates upon.

This problem is related to a duplicate entry in the PSOPTIONS table. The GUID within that table is a unique ID number that is randomly generated for each agent within the EMF. When copies of production are made, the GUID may no longer be unique. If the PSOPTIONS table contains the same GUID as a different database, only one of the two databases/environments will be identified by the Hub. This needs to be resolved with the following process:

1. Stop the Application and Process Schedulers for the affected environment.
2. Blank out the GUID in the PSOPTIONS table of the duplicated databases by running this

sql:

```
UPDATE PSOPTIONS set GUID = ''
```

3. Restart the Application servers.
4. The GUID will get created automatically with a unique identifier.

5. Recrawl the agents.
6. Start the agents
7. Execute getenvinfo
8. Check PSEMViewer

Error When Uploading Environment

The “Error When Uploading Environment” message is an error that would be encountered early in the upgrade process. It would happen during the discover & analyze, or the search phase of the upgrade process. This error does not allow the environments to be uploaded to Oracle’s Customer Connection site.

This error could be caused by a number of factors. The issue can be caused by the Oracle customer having more than one Customer Support Identifier (CSI) number associated with their user ID. Another cause could be a corporate firewall setting blocking the ability to upload to the Oracle Customer Connection. Due to the variety of causes for this issue, the best resolution to this issue is opening a case with Oracle (Oracle Corporation, 2010, ID 752489.1).

Data Mover jobs get “Invalid User ID and Password for Signon”

While this type of error is reported by Change Assistant users, it is, in fact, an issue with security and not an issue with the Change Assistant. The cause of this type of error is because the user ID that is running the upgrade does not have the proper permission. The ID that is running the upgrade requires the PeopleSoft Admin role in order to perform an upgrade.

The appropriate access should be granted to the ID by the PeopleSoft security administrator. After the appropriate access has been granted, the ID that will be used for an upgrade should be able to be log into Data Mover 2-tier to test the access. This access verification should be done as a standard step before the upgrade begins to avoid any delay during an implementation (Oracle Corporation, 2011, ID 1075457.1).

Additional Pre-requisites Error is Encountered

The Change Assistant has been found to display errors saying that a pre-requisite is required, even if the pre-requisite is already installed. This can occur between changes that are being applied. For example, if two maintenance packs are being applied to the application, the Change Assistant may complete the installation of maintenance pack #1 and then fail to begin the installation of maintenance pack #2 because the maintenance pack #1 was not found to have been installed (peoplesoft-admin.rakeshparwal.com).

To avoid this error, insure that the following series of steps are performed between each application update:

1. Complete the initial update (maintenance pack #1)
2. Close Change Assistant
3. Run GetEnvInfo.sh script on App Server
4. Run StartAgent.sh on App Server
5. Open Change Assistant
6. Proceed with the subsequent update (maintenance pack #2)

Additionally, this error can occur if the ID that applied the prerequisite is not the PeopleSoft ID, PPLSOFT. See Oracle's document on this entitled "E-CA: Change Assistant will not apply Bundle due to Pre Requisite (not) Found" [ID 624319.1].

Appendix C

Change Assistant Training Resources:

Oracle Corporation. (2011, June 17). *Getting Started on Your PeopleSoft Upgrade (using Change Assistant)* [ID 739129.1]. Retrieved June 20, 2011, from My Oracle Support:

[https://support.oracle.com/CSP/ui/flash.html#tab=KBHome\(page=KBHome&id=\(\)\),\(page=KBNavigator&id=\(bmDocType=REFERENCE&bmDocDsrc=KB&bmDocID=739129.1&bmDocTitle=Getting%20Started%20on%20Your%20PeopleSoft%20Upgrade%20\(using%20Change%20Assistant\)&viewingMode=1](https://support.oracle.com/CSP/ui/flash.html#tab=KBHome(page=KBHome&id=()),(page=KBNavigator&id=(bmDocType=REFERENCE&bmDocDsrc=KB&bmDocID=739129.1&bmDocTitle=Getting%20Started%20on%20Your%20PeopleSoft%20Upgrade%20(using%20Change%20Assistant)&viewingMode=1)

Oracle Corporation. (2011, April 22). *Configuring Change Assistant for a PeopleTools Only Upgrade [Video]* [ID 1270472.1]. Retrieved June 15, 2011, from My Oracle Support:

[https://support.oracle.com/CSP/ui/flash.html#tab=KBHome\(page=KBHome&id=\(\)\),\(page=KBNavigator&id=\(bmDocType=HOWTO&bmDocDsrc=KB&bmDocID=1270472.1&bmDocTitle=E-UPG%20Configuring%20Change%20Assistant%20for%20a%20PeopleTools%20Only%20Upgrade%20%20%20%5BVideo%5](https://support.oracle.com/CSP/ui/flash.html#tab=KBHome(page=KBHome&id=()),(page=KBNavigator&id=(bmDocType=HOWTO&bmDocDsrc=KB&bmDocID=1270472.1&bmDocTitle=E-UPG%20Configuring%20Change%20Assistant%20for%20a%20PeopleTools%20Only%20Upgrade%20%20%20%5BVideo%5)

Appendix D

FSCM 89 to 91 Application Upgrade Only

<u>Description</u>	<u>Manual / Automated</u>
Planning Your Application Upgrade	
Understanding Your Upgrade	
Verifying the Software Installation	Manual
Defining Upgrade Databases	Manual
Reviewing Upgrade Notes and Tips	Manual
Copying Your Production Database	
Making a Copy of Production Database	Manual
Increasing Database Space	Manual
Preparing Your Upgrade Job	
Modifying the DB2 Scripts	Manual
Evaluating Upgrade Steps for Your Upgrade Job	Manual
Modifying Compare Report Options	Manual
Identifying Customizations	
Identifying Customizations	Manual
Backing Up Demo Databases	
Backing Up the Copy of Current Demo	Manual
Backing Up the New Release Demo	Manual
Preparing Your Database for Upgrade	
Applying Upgrade Planning Files	
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Updating Statistics	Manual
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Performing General Options Setup	Manual
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Reviewing Process Scheduler Processes	Manual

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Reviewing Country Data	Manual
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Reviewing ChartField Configuration	Manual
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Running RNEPEMT01 Script on Copy of Current Demo	Automated
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Setting Object Version Numbers	Automated
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Restoring the New Release Demo	Automated
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Reconciling Notification Templates	Automated
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