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Final Copy of Case Study

LOCATION:
Charlotte, NC, US

YEAR:
2011

STATUS:
Laureate

CATEGORY:
Digital Access

ORGANIZATION:
Teachers Insurance and Annuity Association - College Retirement Equities Fund (TIAA-CREF)

ORGANIZATION URL:
https://www.tiaa-cref.org/public/index.html

PROJECT NAME:
Omni Upgrade – The Vision of Improving Customer Experience

PROJECT OVERVIEW

With the vision of improving customer experience and delivering transparent and hassle free processing of their insurance products, Teachers Insurance and Annuity Association (TIAA) decided to upgrade their Mainframe based, Retirement & Annuity Product Management software Omni, from Version 5.34 to the most current Version 5.80. Omni has interfaces with 80+ client facing web-based, Siebel CRM and Asset Management software through web services. The goal of the project is to test and certify that Omni and its interfacing applications are working as expected after the upgrade without affecting Business as Usual. TIAA has partnered with SunGard and Cognizant. The Project resolved the following Problems Statement: 1) The inability of existing Omni software to support the latest Industry Functionality like Auto Enrolment, ROTH processing, Enhanced Redemption Fees, and Increased Fund limits, which is limiting the TIAA product offerings 2) Lack of Self Service and more paper work that lead to increased processing time 3) Legacy Content Management system with manual business work flow for the content creation that slows the distribution of content needed to influence Clients, Vendors and Partners 4) Lack of adoption of newer technologies like mobile platform and lack of Non-English content preventing TIAA from extending service reach 5) The inability to quickly react to changes in the regulatory environment. Challenges: 1) The Omni software is heavily customized (70%) to support TIAA business requirements. It is a huge challenge to ensure all customizations work as expected after upgrade. 2) The BAU should not be affected by this upgrade; there were 2000+ Plans and 3.6 million clients doing business with the organization 3) A huge number of Regression Test Cases (6000+) need to be executed within a short period of time to ensure that no existing functionality is broken 4) Identifying or creating Test Data for 6000+ test cases, especially when one test case may require multiple test datasets. 5) End to End testing of features that are initiated from a Web Application and completed with a report sent to the client involving complex middleware applications 6) Testing huge number (70+ reports each having 2000+ pages) of Regulatory Compliance

reports and documents generated for Clients Solution: 1) Considering the above challenges, a unique testing approach that had the traditional test phases along with two new primary activities that reduced the Regression Test Effort by 70%: a) Mock Upgrade Verification Testing b) Production Parallel Testing 2) Automation of Regression Test Cases to reduce the effort required in dual testing; 1000+ test cases were automated in the intermediate release environment and executed in Upgrade environment which saved 450+ manual testing hours 3) A unique Test Data Management solution that reduced 400+ hours effort for Test Data Identification using Omni Scripts and Oracle tool 4) A dedicated Test lab that simulates a production environment with high security for testing the mobile applications, especially iPhone; use of emulators to balance speed and quality 5) Used solution accelerators like Automatic Comparison tools for huge volume of reports comparison

SOCIETAL BENEFITS

The upgrade enabled TIAA to offer the latest Industry leading functionality, an improved ability to react to Regulatory changes, and capability needed to reach out to the Government and Healthcare sectors. It enabled clients to process withdrawals quickly (from 20 to 7 days) and to enrol online with minimal paperwork.

PROJECT BENEFIT EXAMPLE

1) Faster Withdrawals: A process improvement called "Tactical Straight Through Processing" (TSTP) enabled Clients to complete the Withdrawal process in 7 days as compared to 20 days previously. Before TSTP, a Client initiating a Withdrawal request would be sent multiple forms to manually complete with information readily available in the system. Many Clients were intimidated by the documents they were expected to submit for verification. After the TSTP implementation, most required forms are automatically generated by the system and the client is presented with just the few remaining documents they have to submit manually. This process automation drastically reduced processing time from 20 days to 7 days leading to superior client satisfaction. 2) Faster access to TIAA information through mobile technologies: The TIAA iPhone application gives access to TIAA information from anywhere in the world. With this application, the client can view his account details securely, track how the TIAA funds are performing, use tools to analyze how his investments are working, the latest market performance, and call the TIAA help desk or locate a TIAA office nearby. All these features are given in a world class, Apple approved graphical user interface. With this application, the user can always be updated. 3) Faster and Flexible bill processing for Financial Advisors: Financial Advisors provide financial consultation to clients through Call Center and help them to perform their activities. A one-time fee will be levied against the clients. Performance enhancements to this application as a part of the upgrade enabled the Financial Advisors to have flexible billing cycles (monthly, quarterly etc.) and quicker check processing. 4) Enabling Health Care Institution: The state of the art functionality achieved using the upgrade enabled TIAA to help a third-party Healthcare institution to setup and operate a Retirement Savings Plan for the Healthcare industry. It also helped TIAA to compete in future growth markets such as Healthcare. 5) Reusable Tools: The technical solutions developed for this project not only helped during the upgrade, but are reusable in the future as well. a) The Regression Automation Suite developed is being used in every release and considerably reduces the amount of manual testing effort. b) The tools used in Production Parallel Testing are reusable in every major or minor upgrade of the Omni software. c) The non-conventional automation tools are being used in every test cycle across releases and continue to provide added value. Continuous use of these tools helped to save 2000+ hours after project implementation.

IS THIS PROJECT AN INNOVATION, BEST PRACTICE? Yes

ADDITIONAL PROJECT INFORMATION

1) Automation Tool Box (ATB): This is an innovation to manage the different Automation initiatives effectively. ATB is a place where the inventories of all the Automation and Non-Conventional Automation scripts are maintained. For every execution, effort and cost savings compared to the manual effort is automatically calculated and presented in extensive charts. ATB helps to visualize the automation benefits and analyze the ROI of the scripts over a period of time. Please refer Appendix 2 for a Screenshot. 2) Value Vector: Value Vector is an important tool to monitor the value additions on a continuous basis and make informed decisions. The tool provides trends of both Cost Saving vectors (such as Regression Automation or Non-Conventional Automation) and Cost Avoidance Vectors (such as Incident Management process or Capacity Planning). The trend charts help us to keep the value addition in an upward direction. 3) Test Data Management: The industry wide problem of dealing with test data was addressed by devising a test data strategy, employing a combination of data seeding and data mining techniques. Test data mining was addressed by building an armory of data mining tools out of a 4GL scripting language and the Oracle Business Intelligence tool. This resulted in significant time reduction for Test Data Identification. 4) High Maturity Practices: A set of high maturity practices were implemented, such as Process Performance Models to monitor the project progress on a daily basis, Causal Analysis and Resolution to identify the root cause of the issues and Statistical methods like Hypothetical Testing to validate the improvements. 5) Incident Management: A simple but effective system to track and escalate connectivity issues which frequently resulted in avoiding incidents before their occurrence. 6) BA/QA Model: Involvement of SMEs in each stage of the testing ensured that defects are identified earlier in the testing cycle rather than later. 7) Metrics Reporting: To enable better project management, testing metrics such as defects counts, critical defects, defect trends, and quality of fix are reported on a daily basis to the management team. 8) IZone: A platform for testers to log their ideas and adopt readily available innovations in their day-to-day activities was used. 9) Knowledge Repository: To address the knowledge gap issue, Business related and Testing related learning materials are prepared, reviewed and made available in one place. This helped resources to update their knowledge as required. 10) RCA on Errors: In order to reduce and avoid Data Entry errors (which are time consuming to rectify), Root Cause Analysis was performed on each testing cycle and the results shared with the team before the next cycle. This enabled the team to achieve a 99% success rate in data entry that enabled on time product delivery.