The Benefits of Automated Testing Of Oracle E-Business Suite

Introduction

This document note considers why organisations using Oracle EBS should consider investing in automated testing.

Software systems are becoming increasingly complex and require ever increasing testing to minimise risk to businesses. This is especially true for large systems such as Oracle EBS which provide solutions for many functions within an organisation. Test teams are faced with a huge task when testing EBS. Procure to Pay alone consists of over 600 windows. Just running each screen once during a test run would be an onerous task in itself, let alone the test team's main task of ensuring that these screens work in a way that supports business processes correctly. However testing resources such as testers and time are necessarily limited. Inevitably, test packs are chosen in a pragmatic way which takes into account the limited resources, as well as seeking to minimise the risk of systems failure. Test teams simply do not have the resources to test their systems thoroughly.

Testing a system manually is done by a tester running the system and performing actions that have usually been scripted to provide as complete coverage of business processes as possible. The tester mimics what the end users do — keying in data and navigating through the system's screens. These tests are often repeated during the same development project. It is a hugely time consuming task.

Test automation can automate the test execution task. It is not a silver bullet but can give remarkable increases in tester productivity and reductions in risk due to system failure.

Costs of Testing

Although there is a great deal of variation, the standard, manual testing costs of software development projects are generally around 40% of a projects total cost. This varies greatly and may be much higher for BAU testing and regression testing. For Oracle EBS regression tests, system changes may be as simple as applying patches and so in this case testing is *the* major cost.

So how do we keep testing costs down? The major cost in testing is people. It may be possible to improve test processes by, for example, rationalizing test scripts to maximize coverage and minimize execution time, but there is a limit to what the savings can be made here. Greater savings are possible by using test automation to reduce test resource requirements during test execution. It must be noted that test automation is not a replacement for testers; rather, it makes testers more productive and allows greater flexibility in when the tests can be run.

Benefits of Automated Testing

The benefits of test automation accrue from firstly, replacing at least a large part of the manual testing with automated test execution. The second area of benefit comes once this has been achieved, in that more tests can be automated and run than would otherwise be possible manually. Thus, risk to the business can be further reduced by increased test coverage. Because test automation offers this improvement to testing it increases the standard benefits of testing such as improved reliability and reduced production failures.

Test Automation offers the additional advantage of being able to be run very quickly and at times when staff are busy or even asleep. This speed increase makes is possible to more rapidly assess the quality of a software release and to get to defects faster.

Benefits to the overall business are:

- Reduced risk of business interruption due to system failure
- Reduced test execution costs
- Improved testing due to higher test coverage and therefore:
    - higher system reliability
    - Increased system availability
    - Lower support costs
    - Increased customer satisfaction

Benefits to development and testing:

- Reduced test execution times — Test automation is fast. As will be seen later, an automated test pack can run in a tiny fraction of the time needed to manually test a system. Additionally automated test packs can be run unattended overnight and the results checked the next working day.
- Increased tester productivity — testers can test more, faster with test automation.
- Increased test coverage — once a test team has automated their manual tests they can then automate more tests that they simply would not have had the time to run in a manual regression test run.
- On-demand test runs — because tests can be run automatically overnight, complete regression tests can be run more often in situations where this would never have been considered in the past. For example emergency patches often go into production with minimal testing. Automated test packs offer the ability to completely regression test such small urgent fixes. Automation results in an increase in the number of times a test pack is run.
- Decreased time to discover errors — errors can be found and fixed earlier because the test execution time is greatly reduced with automated tests.
- Consistency of test runs — automation offers accurate, repeatable tests which can enable test teams to use data comparison tools to again improve test coverage.
- Improved moral in the test team — repeatedly running the same test pack is a boring manual task which test automation can replace, allowing testers to concentrate on more complex, more rewarding tests.

The Test Automation Approach

Test automation tools have been available for over twenty years. The full benefits have not been realized by many organisations and take-up of automated testing has been patchy. This has been due, in large part to the approach to building automated tests. The traditional approach was to program or script automated tests using expensive test tool specialists. More recently 'scriptless' approaches such as Simply Testing's *Test Liberation* framework have started to be used. The main benefits of this approach are that:

- The test team do not have to have skilled test tool experts
- The automation code does not have to be built
- The automation code does not need to be changed/maintained as the system under test changes
- Tests are built by subject matter experts or business people without needing to understand the test tool.

Cost Benefits Case Study

This case study is of the implementation of automated testing at one of the UK's top six energy companies. The company already had the Oracle E-Business Procure to Pay module including iProc and was in the process of implementing HR, Payroll and GL and it had been foreseen that the regression testing task was going to increase dramatically with the new EBS modules. This was not simply because the system was going to triple in size but also because the three EBS modules were interdependent. It was apparent that if

one module was changed, the other two modules may well to need to be regression tested as well as the changed module.

The company already has a manual P2P regression test pack of 110 large, end to end business process tests. A regression test pack would be assembled from these tests after impact analysis and would typically consist of about 60 tests. The main driver for the selection of a reduced test pack was that there was not enough skilled tester resource available to run the complete test pack within the time allowed for regression testing.

The manual regression would usually take at least six man-weeks to run during three weeks elapsed.

The *Test Liberation* 'script-less' automated testing framework was used to provide automated testing capability and the manual tests were automated by building excel spreadsheets with the required actions in them. Testers took on average about one day to build an automated test in Excel. Once the manual tests had been converted to automated tests, the automated regression test pack of 60 tests for Oracle-EBS would run in six hours, unattended, over-night.

The company has continued to automate more tests as its test pack has grown with the extended system functionality (HR and GL). The test team is now able to run a large portion of its regression test pack at will and at times when it would not have considered a regression test run possible. Because of Test Liberation's script-less approach, the client's own, non-technical test analysts built the tests without the need to know how to script (or program) the underlying automation tool, QuickTest Pro. The test team has maintained the test pack without the need for expensive QuickTest Pro programmers or consultancy for over fifteen months at the time of writing and has not needed to change a single line of QTP code. Simply Testing have provided telephone support and a couple of on-sites visits.

The test team has now, at last count, automated 180 large tests for P2P, HR and GL which can be run over-night.

Conclusion

Software test automation has been shown to reduce testing costs, improve tester productivity and gives the ability to test Oracle EBS much faster than by manual means. It also offers a route to increased test coverage and therefore increased quality of the delivered system. The correct approach to test automation is essential and Test Liberation has been shown to be a proven and effective method.

More information is available at
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