



Siebel Testing and Business Process Testing Framework

Executive Summary

Reusability is the buzzword in the industry. However, in testing, it is very difficult to achieve reuse when it comes to automating the steps written for test cases. By encouraging design tests early in the project lifecycle, the business process testing (BPT) framework introduces reuse to testing environments. This paper explores the following issues when it comes to reuse in testing:

- How to increase reusability using the BPT framework.
- How to use the BPT framework for Siebel testing and reuse it for automation.
- How to reduce rework using the BPT framework.

Business Process Testing

A business process is a collection of related activities or tasks that are performed to achieve a particular goal requested by customers. One of the first people to describe business processes was Adam Smith, in his famous example of how a pin is produced in a factory:

One man draws out the wire, another straightens it, a third cuts it, a fourth points it, a fifth grinds it at the top for receiving, the head; to make the head requires two or three distinct operations; to put it on is a peculiar business, to whiten the pins is another... and the important business of making a pin is, in this manner, divided into about eighteen distinct operations, which, in some manufactories, are all performed

by distinct hands, though in others the same man may sometimes perform two or three of them.¹

The process of producing a pin can be described as a sequence of components whose steps performed will create a “pin” as its output. Keeping in mind the above example, the business components for the process can be defined as follows:

- Draw out wire
- Straighten wire
- Cut wire
- Point wire
- Grind wire top
- Carve pin head
- Attach pin head to wire
- Whiten finished pin

Any process completed for each component involves a series of steps to be followed. Similarly, the BPT approach helps the quality assurance organization design tests early in the life cycle of the project, making use of reusable units called business components. The BPT approach comprises:

- Reusable business components
- Business process tests

BPT uses a new methodology for testing and, in conjunction with testing tools such as QuickTest Professional and WinRunner, provides numerous benefits by offering an improved manual and automated testing environment.

What is a Business Component?

To understand business components, consider the example of object-oriented programming, in which we create reusable objects with functions.

```
TotalInterest
{
  Amt = GetLoanAmount()
  IntRate = GetInterestRate()
  TotalInterest = CalculateInterest(Amt, IntRate)
}
```

In this case, we have broken down a large program into small, reusable functions. Similarly, by using BPT, we can break test cases into a set of reusable pieces called business components (see Figure 1).

In Figure 1, both test cases share Business Components 1 and 2, thereby increasing reusability. Changes to the business components, if any, will need to be done in just one place, thereby updating all other test cases. As one can see, only business components need to be changed rather than modifying all test cases individually. This helps reduce the overall rework effort.

What is a Business Process Test?

A business process test is a test case that comprises business components. For example, a business process test for the objective, "Verify that field Status contains valid values" can comprise the following business components:

Reusable Business Components

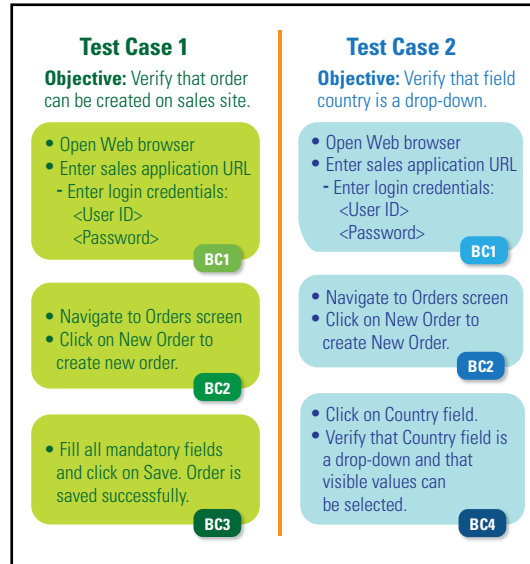


Figure 1

- BC1 – Open Web browser and enter login credentials
- BC2 – Navigate to Accounts screens and search for an account
- BC3 – Verify field values

The above-mentioned business components can be reused for a number of business process tests (see Figure 2).

Business Process Tests

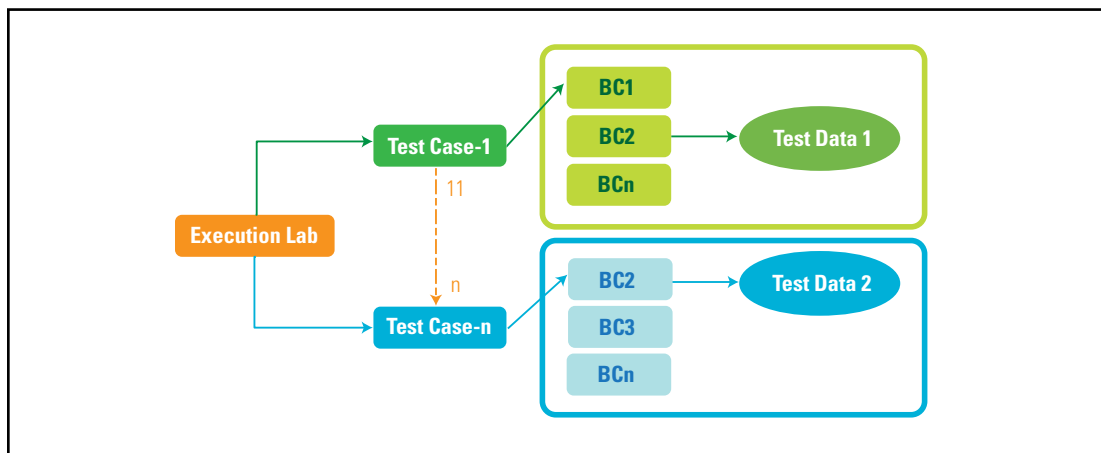


Figure 2

How BPT Can Be Carried Out in a Quality Center

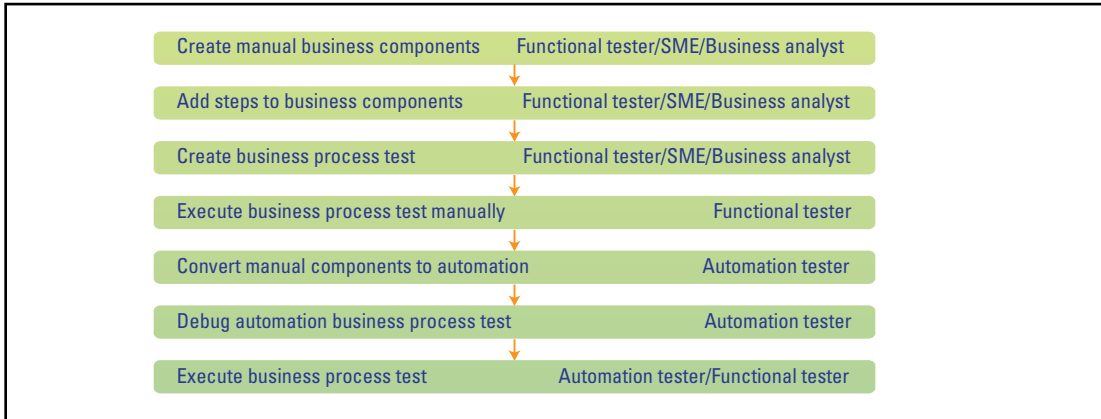


Figure 3

Figure 3 depicts how BPT can be carried out in a quality center.

Business Process Testing and Siebel

The BPT approach can be used extensively for Siebel applications because the steps in the test cases are repetitive in nature. Organizing these repetitive steps into business components can lead to a reduction in test case writing, reviewing and reworking efforts.

For example, in Siebel, the following steps are often used for navigating from one stage to another:

- Navigating to Accounts screen and creating new account
- Navigating to Accounts screen and creating service request for selected account
- Navigating to Accounts screen and creating contacts for selected account

In this example, the navigation steps are the same throughout but are used for multiple scenarios. Defining business components for any of these navigation steps will lead to reusability of the components in every test case. Even in the case of changes, these steps will need to be updated only once. Moreover, an automation script needs to be written only once for this set of steps, and updates will also be required in just one place.

Similarly, in Siebel applications, transactional data needs to be created multiple times for 'n' number of input values. When the BPT approach is followed, only one test case (i.e., the BPT test case) is required for the creation of transactional data, whereby different input values can be provided as parameters. Only input parameters

BPT for Siebel Test Cases

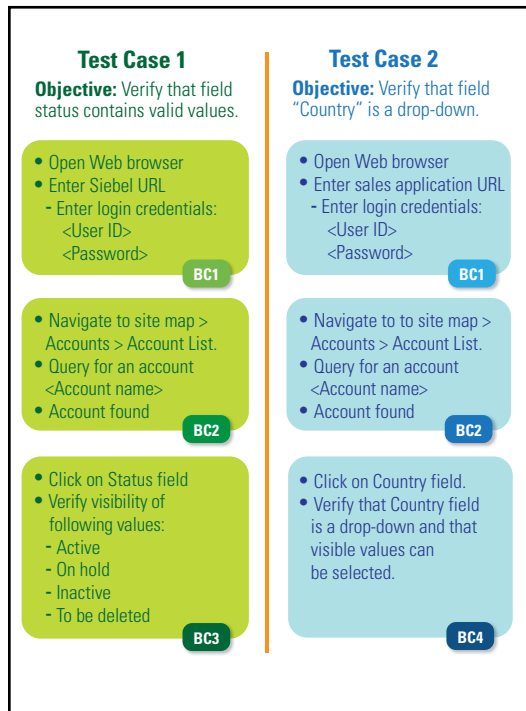


Figure 4

need to be updated for the existing test case vs. writing a completely new test case when there is a change.

Figure 4 describes how the BPT approach can be used in typical Siebel test cases. As seen, the test cases in Figure 4 contain similar steps; hence, reusable steps can be broken down in a business component.

Atomic Business Components

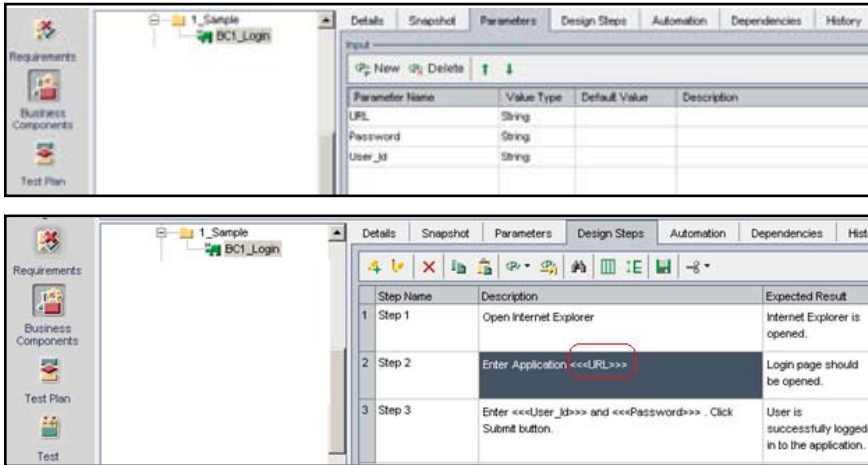


Figure 5

Automated Business Components

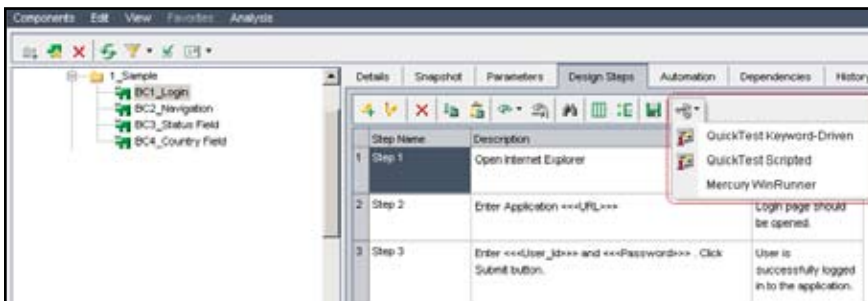


Figure 6

A business component should be as atomic as possible so that it can be re-used in multiple test cases. In Figure 5, Business Component 1 is designed only for login steps with a URL, user ID and password to make it highly reusable and parameter driven.

Manual business components can be promoted to automated business components using the Automate Component option (see Figure 6).

The other components can be designed similarly. Once this is done, a test case can be created by pulling business components (see Figure 7, next page).

Business components in test cases can be grouped together in order to execute for multiple input values. For example, if Test Case 1 needs to be repeated for different users, then all business components need to be grouped, and input values need to be added (see Figure 8, next page).

Similarly, if the same test case has to be repeated for different accounts, then input values need to be added for the account name parameter (see Figure 9, next page).

Test cases can be pulled in the test lab and executed either manually or via automation, provided automation scripts are written for business components (see Figure 10, page 6).

During execution, parameters are replaced with actual values as setup for iterations. For the above example, the parameter was URL, but while executing, the value of the parameter is as shown (see Figure 11, page 6).

Similarly, the user ID and password will also be replaced with the values provided in the iterations (see Figure 12, page 7).

Test Case

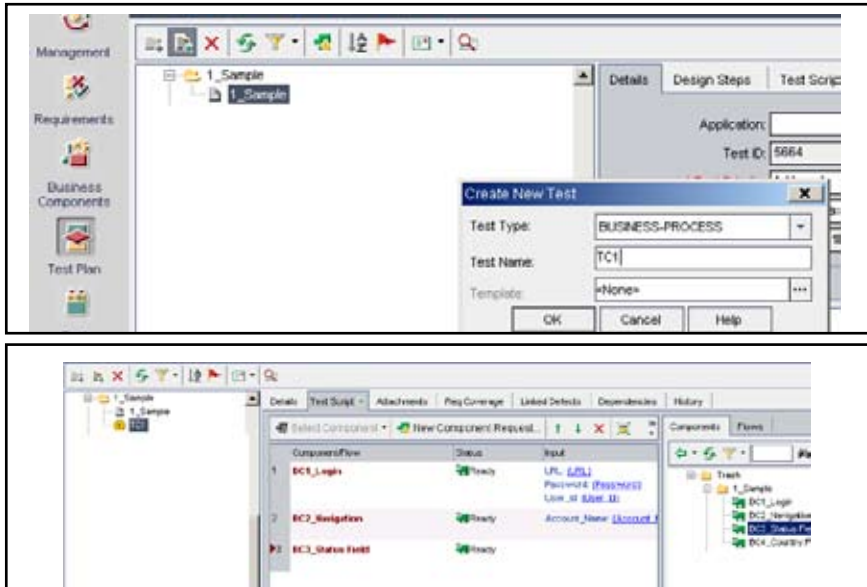


Figure 7

Grouping Business Components

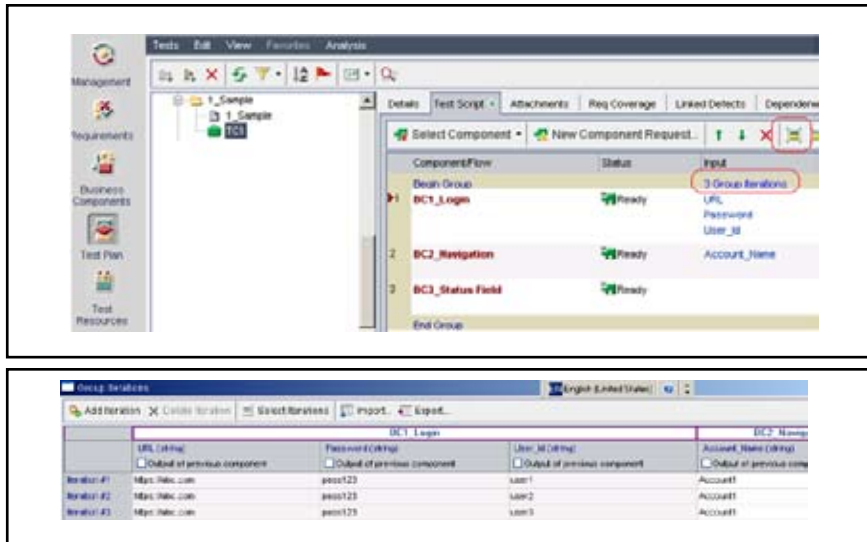


Figure 8

Repeating Test Cases

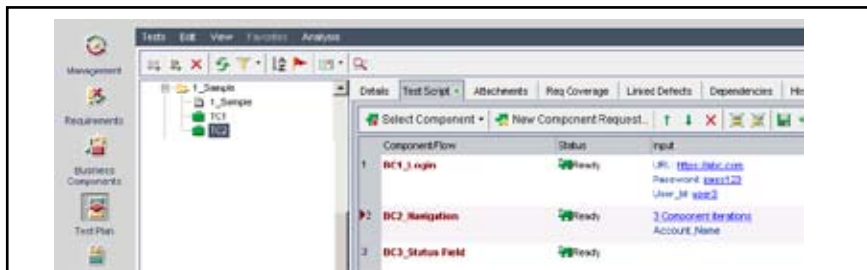


Figure 9

Executing Test Cases

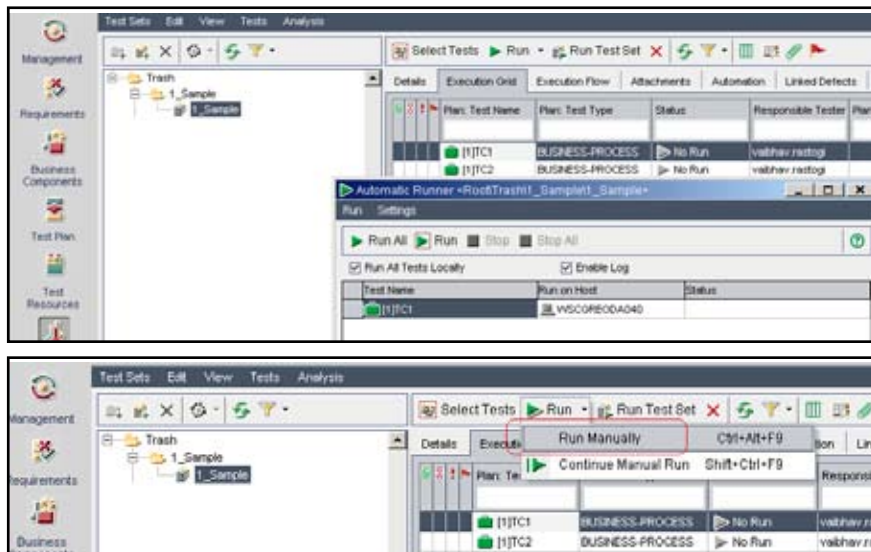


Figure 10

Parameter Values During Execution

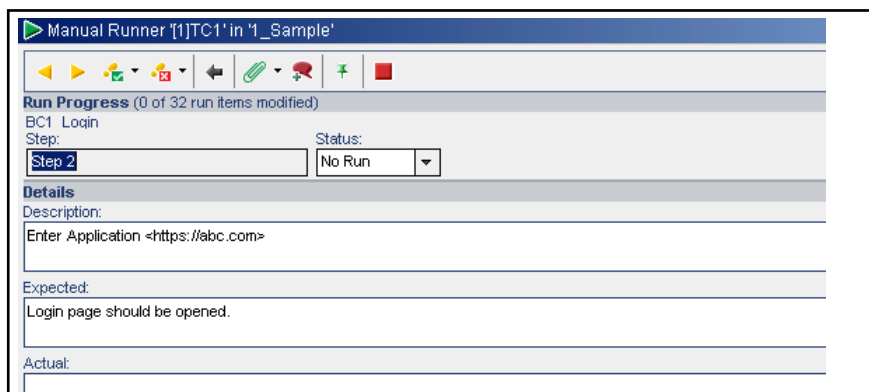


Figure 11

Iteration details can also be viewed after executing the test case, which will show values of the parameters (see Figure 13, next page).

Benefits of Business Process Testing

Business process tests can be created by functional testers, subject matter experts and business analysts who understand the business process best. This leads to the creation of a high-quality business process test, thereby leading to high-quality deliverables following the testing cycle.

Business process testing enables structured testing by enabling automation testing. This is possible because of the following:

- Automation testing becomes structured by using business components. Since automation scripts need to be written only once for every component, they can be reused for any number of business process tests. This reduces the effort of writing and maintaining automation scripts (see Figure 14, next page).
- Business process testing is not dependent on the completion of detailed testing scripts. Applications can be tested manually before automated tests are ready.

Test creation is accelerated through the use of reusable business components in multiple business process tests (see Figure 15, next page).

User ID and Password Values

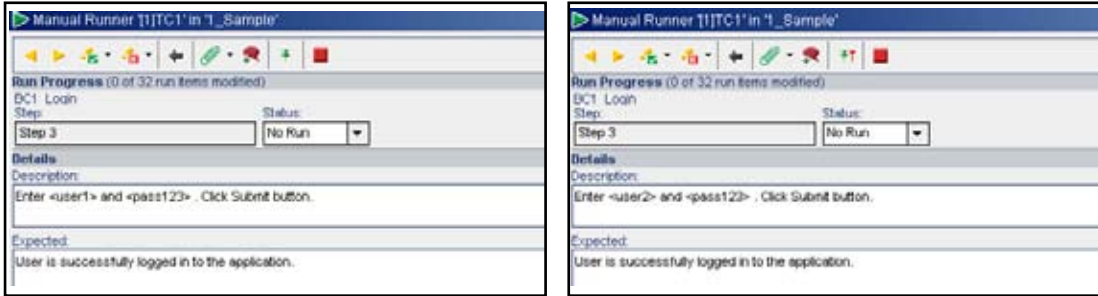


Figure 12

Parameter Values Shown

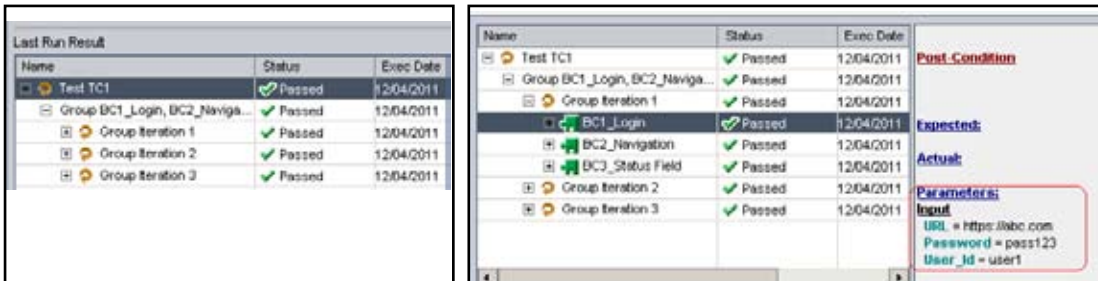


Figure 13

Reusability with BPT

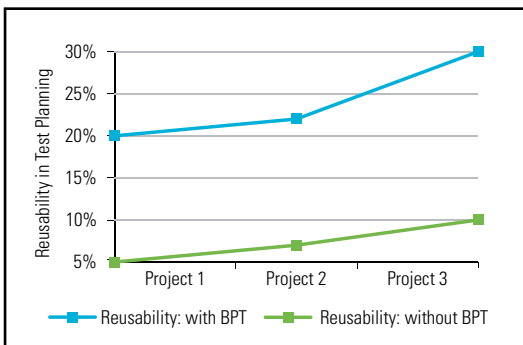


Figure 14

Accelerated Automation

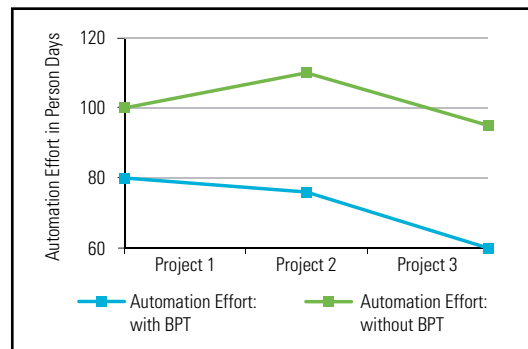


Figure 15

Savings with BPT

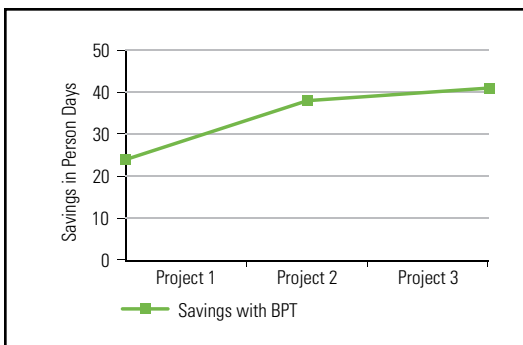


Figure 16

Reduced Rework

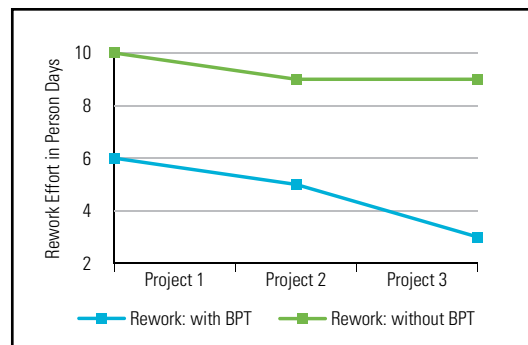


Figure 17

In addition, ongoing test maintenance time and costs are reduced (see Figures 16 and 17, previous page).

Lastly, using BPT, automation testing capabilities in Quick Test Professional and WinRunner can be used.

Target Market

Target markets for BPT include customers using Siebel and wanting to reduce testing efforts, customers exploring various automation testing frameworks and customers who want to use the BPT framework.

Conclusion

With higher levels of reusability achieved for both manual and automation projects, BPT helps reduce ongoing maintenance and rework costs. However, return on investment needs to be considered when opting for a BPT framework, as the business components framework in test tools requires a separate license. BPT will also be heavily beneficial for projects in which regression tests are to be automated, as it reduces efforts spent on automation scripting drastically.

Footnotes

- ¹ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*, 1776, <http://geolib.com/smith.adam/won1-01.html>

About the Author

Vaibhav Rastogi is a Senior Consultant in the CRM Practice, with more than seven years of experience in Siebel testing, including manual and automation testing. He holds a Master's of Computer Applications degree. Vaibhav can be reached at Vaibhav.Rastogi@cognizant.com.

About Cognizant

Cognizant (NASDAQ: CTSH) is a leading provider of information technology, consulting, and business process outsourcing services, dedicated to helping the world's leading companies build stronger businesses. Headquartered in Teaneck, New Jersey (U.S.), Cognizant combines a passion for client satisfaction, technology innovation, deep industry and business process expertise, and a global, collaborative workforce that embodies the future of work. With over 50 delivery centers worldwide and approximately 118,000 employees as of June 30, 2011, Cognizant is a member of the NASDAQ-100, the S&P 500, the Forbes Global 2000, and the Fortune 500 and is ranked among the top performing and fastest growing companies in the world. Visit us online at www.cognizant.com or follow us on Twitter: Cognizant.



World Headquarters
500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277
Email: inquiry@cognizant.com

European Headquarters
1 Kingdom Street
Paddington Central
London W2 6BD
Phone: +44 (0) 20 7297 7600
Fax: +44 (0) 20 7121 0102
Email: infouk@cognizant.com

India Operations Headquarters
#5/535, Old Mahabalipuram Road
Okkiyam Pettai, Thoraiyakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060
Email: inquiryindia@cognizant.com