



# Client Case Study

## End To End Testing

### Introduction

Imagine you are a major high street bank looking to open a new retail and investment banking solution in the United States. This is clearly a major exercise not least of which is designing and implementing a banking application system to support this business. It will be apparent that the scale of this application will require significant system testing. If you are to implement a brand new banking application in the United States then you cannot afford any software issues since the resulting reputational risk to the business would be unacceptable.

There are a number of considerations which make this a significant programme from a testing perspective. A large number of distinct components (each with their own development and test teams) to be brought together to constitute the new banking application. United States payments processing covering not just the more common SWIFT message processing but Fed and CHIPS payments as well.

Under the overall design of the programme, each component team will develop, component test and undertake localised system testing. Additionally, for the programme, the entire component landscape must be considered for testing under a full End To End System Test phase.

Where can SQA assist and add value? Existing component testers can undertake the actual test scripting and testing for each component but for full End to End testing, SQA can assist in scoping and defining full joined-up End To End testing.

The task then is to define End To End System Test scenarios covering business process flows, and from which End To End System Test scripts can then be written.

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### More Detail

The requirement then is clear enough, and the steps are as follows:

First, it is necessary to fully understand the component landscape. With an implementation as large and complex as a new banking application there are a many components which interact with different process flows which together constitute the overall testing landscape. A complete system process diagram is therefore the first step, describing all the components and linked processes which are in scope.

Having defined the landscape scope, with a system as large as this one, simply in order to manage the work load it is then necessary to compartmentalise the system such that discrete E2E process flows can be documented, though the ultimate aim will always be to join these discrete E2E flows in different permutations to provide complete E2E process flows which cover the widest start and end points for process flows through the system landscape. For a banking application, discrete process flows may be defined covering for example on-boarding clients, opening accounts, payment processing, producing customer statements and MI and report production.

With the scope of the test scenarios defined, work can begin on constructing these scenarios. The first task is workshops with business representatives whereby business processes can be identified, and more specifically from a System Test perspective, business process flows can be documented, ensuring full coverage of all automated flows between components in scope. It is then necessary to workshop these business process flows with the applicable component technical experts to ensure full understanding of how the system components interact to support these business process flows.

With this knowledge, business process flow test scenarios can now be written providing E2E test coverage across the system landscape.

It is necessary to consider that component testing and limited/localised system testing will already have been conducted. However, E2E testing will be the first time the same test case has been processed from start to finish through a full E2E process flow. So the E2E test scenarios should not repeat earlier testing but will provide a breadth and extent of system testing such that when UAT starts, there is confidence that the entire system landscape has been fully system tested in a joined up, live-like state.

With E2E Test Scenarios written, that is our current task completed. The E2E Test Scenarios can then be handed over to test scripters who will use these process flow scenarios from which to write test scripts that will supply the required E2E System Test coverage.