**HP ALM?**

Slide 3

HP Application Lifecycle Management (HP ALM) is a set of software products designed for accelerating the delivery of secure, reliable modern applications. It is a combination of a common platform, several key applications and a dashboard targeted at managing the core lifecycle of applications.

**What is ALM BPT?**

Slide 4

Business Process Testing is a framework for QA organizations to build and reuse structured testing components in both manual and automated testing.

BPT is ideal to build frameworks to maximize reuse of testing components mitigate risks by aligning business requirements with end-to-end test scenarios.

Business Process Testing is a fast and efficient way of creating, organizing and executing tests. It is extremely similar to using manual reusable templates to build up a script, but it extends the idea by pairing seamlessly with automation, and including an easy, user friendly interface for building up tests.

**Business Process Testing enables you to:**

**Slide 5, 6 7**

➤ Design quality assurance tests for an application early in the development cycle and in a script-free environment.

➤ Design quality assurance tests at various levels without any scripting knowledge from the design of a high-level test structure down to the design of actual steps.

ALM BPT Benefits

* ALM BPT can be created without the need for a programming background.
* ALM BPT dramatically reduces the need for repeating steps and facilitates text reusability.
* ALM BPT supports the creation of both manual and automated steps for each component. The manual and automated steps can be synchronized.
* Business Process Testing is not dependent on the completion of detailed testing scripts. After designing the test and establishing automation guidelines, applications can be tested manually by non-technical users even before automated tests are ready. This facilitates the quick implementation of business process tests.
* Usage of automation assets in the design or implementation of test steps does not require coding skills.
* Business process test creation is accelerated by the ability to use modular, reusable flows and business component units in multiple tests.
* Version control enables you to keep track of changes made to entities in your project, including business process tests, flows, and components.
* Documents containing information about the tests, flows, and components in a project can easily be generated.

**Roles**

**Slide 8**

The Business Process Testing model is role-based, allowing non-technical subject matter experts to work on tests with automation engineers.

Roles are flexible, depending on the abilities and time resources of the personnel.

**Subject Matter Experts slide 9**

Have specific knowledge of the application logic, a high-level understanding of the entire system, and a detailed understanding of the elements and tasks fundamental to the application being tested. Subject matter experts:

* Determine the business processes to test.
* Identify activities common to multiple processes (such as a login procedure, used in many business process tests or flows).
* Create business components and steps.
* Define automated keyword GUI component steps.
* Create flows and business process tests.
* Define data for iterations and configurations.
* Run tests to verify that they are designed appropriately and run as expected.
* Review test results.

Automation Engineer Slide 10

Are experts in automated testing using a testing tool such as UFT.

Note: The automation engineer is only needed if the Business Process

Testing framework includes automated tests.

Automation engineers prepare the resources and automated functions required for testing the features associated with each component, such as:

* Application areas, which can be defined within ALM and within other testing tools.
* Function libraries with general scripts, which are encapsulated into general operation keyword GUI steps.
* Shared object repositories, which can be populated with objects that represent the objects in the application being tested. The automation engineer can rename the object repository, create more appropriate keyword GUI steps, and filter out objects which are not relevant. The subject matter expert can use these objects to create steps in business components with keyword GUI automation.

Automation engineers may also be responsible for some of the tasks listed above for the subject matter expert. Automation engineers can also create, debug, and modify business components in the testing tool.

**Other Roles Slide**

**Slide 11**

**QA Testers**. Use and run the business process tests. ALM

**Administrators.** Set up and configure Business Process Testing.

**Choosing Methodologies Slide 12**

Business Process Testing is flexible and does not enforce any one particular model for incorporating business processes into your testing environment. The actual workflow in an organization may differ for different projects, or at different stages of the application development life cycle

**Bottom-up Methodology**

Defining low-level components first and then designing business process tests based on the defined components is called a bottom-up methodology. This methodology is particularly useful when:

* The business processes in the organization are clearly defined.
* Users are new to Business Process Testing.

**Top-down Methodology**

**Slide 12**

The top-down methodology is based on the perspective of the subject matter expert who has a high level understanding of the entire system.

The top-down methodology advocates the creation of business process testing entities according to the following hierarchy:

* Business process tests, which contain flows and/or business components
* Flows, which contain business components
* Business components, which contain manual and/or automated steps

**Methodologies Phases slide 14**

*High-level design.*

Includes the high-level design, creation of a structure for business process tests, and determining the test configurations for testing different use-cases that will be needed.

This part of the design phase is often done by both the subject matter expert and the automation engineer together.

Creating the structure for business process tests and determining the needed test configurations are typically performed by the subject matter expert.

*Mid-level design*

* Creation of flows (sets of business components in a logical order that can be run). Flows are considered "compound components."
* Creation of business components (reusable units that perform specific tasks in a business process). Only the shell of the component is created during this phase.
* Specification of criteria for more granular test coverage (requirements) as necessary.
* Linking to other ALM entities.
* Adding business components to business process tests and flows.

This part of the design phase is typically performed by the subject matter expert, but may also be done in conjunction with the automation engineer, depending on available resources and skills.

*Low-level implementation*

Includes the low-level implementation of business component content by:

* Creating component steps (the content of the business component), including automated steps when necessary
* Grouping components
* Setting up iterations (for business process tests, flows, groups, and components)
* Parameterizing

**Bottom-up methodology**

* Component Specification. Develop a component tree with components. Create the component shell by adding basic details. Create component content by adding manual and/or automated implementations. Component content can contain:
  + Manual implementation for manual components
  + Automation, for automated components
  + Both manual implementation and automation
* Test Planning. Build test plans and design business process tests and flows.
* Data Handling. Design the data that each business process test, flow, or component uses when run.
* Test Execution. Create a subset of the business process tests in your project and run them.

This part of the design phase can be performed by the subject matter expert, the automation engineer, or both together.

* *Parameterization*. You can expand the scope of business process tests, flows, and components by defining the parameters that a component or flow can receive or return, and then replacing fixed values with these parameters.
* *Iterations.* Defining iterations enables you to automatically run business components, flows, and tests multiple times, each time using different input parameter values.
* *Maintenance*. Using BPT tests you can maintenance/modify business components without alter the behavior of the test flow. In case the process flow changes, each component can be modified so that the tests achieve all the new requirements.

**What is a component? Slide 16**

A component is a business process for a number of user scenarios. Validate them and optimize the business process flow all without ever having to touch any procedural code or keywords.

**Components with Manual Content Slide17**

Use the Manual Implementation tab in the Business Components module to create or modify manual business component content in the form of manual steps and expected results.

Manual steps represent operations that should be performed on your application when you run the component in a business process test or flow. Each step comprises a step name, a textual description of the procedure to be performed on the application, and the expected result (if any), of performing that step. When a business process test or flow with a manual component runs in ALM, the tester performs the steps defined in the manual component.

**Pro’s**

1. A manual tester can remove the unwanted component from the test flow without affecting the code. Single point of maintenance for all elements associated with the testing of a specific part of your application
2. High reusability with data-driven test components
3. Quickly test multiple flows , suitable for agile frameworks

**Con’s**

* Anyone can create tests. Since programming skills do not necessary to create components, the component may not be well developed because the guy who is responsible of creating components would not fully aware of certain rules and recommendations that could not be covered during the testing due to certain programming and testing limitations
* Some granularity might become cumbersome. Each business process should be represented by a component so it is necessary to build up a detailed flow with business components so that the flow that the components that are going to be created, they recreate the business process. This process may turn out cumbersome at the moment to create and maintenance a BPT component.