HP Software Announces ALM 11.00 and QC 11.00: Centralizing Requirements Management to Align Business, Development, and Testing across the Application Lifecycle

Abstract
On November 30th, 2010, HP Software announced “the most significant enhancements to the product line since the acquisition of Mercury.” This paper focuses on the requirements management aspects of the launch within the new releases of HP Quality Center (version 11.00) and HP Application Lifecycle Management (ALM) (version 11.00). These enhancements support the new generation of iterative, collaborative software development that is gaining traction in today’s fast-paced businesses.

Improved ease of use, additional support for collaborative capabilities, and centralized requirements management are hallmarks of these releases. HP Software has brought together the previously “separate” worlds of Business Process Modeling and Application Lifecycle Management, with integration across business process modeling products, HP Quality Center, and HP ALM. Centralizing access to requirements of all types provides a basis for a host of new capabilities across the application lifecycle, from design to production.

ENTERPRISE MANAGEMENT ASSOCIATES® (EMA™) analysts see HP Software’s direction as very positive and as a differentiator, particularly for companies leveraging process modeling tools and iterative application development lifecycles.

Requirements Management and Collaborative Development
Technology has become increasingly critical to business success, and delivery of quality applications is a key competency supporting this evolution. HP’s announcements address the changing relationship between IT and business with new features that support the requirements management aspects of today’s application lifecycle methodologies. Iterative development with ongoing stakeholder involvement has become the norm, and constantly evolving requirements go hand in hand with iterative changes to code.

For an increasing number of companies, the application lifecycle runs parallel to separate but related business process modeling initiatives. Particularly for those deploying software as part of composite applications or Service Oriented Architecture (SOA) services, the software is, in effect, instantiating all or part of a business process. From this perspective, it makes sense to build bridges between these discrete but interrelated activities, and HP has done this.

Recognizing that software quality relies on requirements quality, HP has enhanced support for the Business Analyst (BA) role. BAs are a key link between IT and the business, and have traditionally lacked the tools they need to fill this role. Requirements serve as the information conduit across the three groups and provide a “common language” that clarifies what is to be delivered and why.
BAs face a multiplicity of challenges. The role itself is changing and requires far more technical knowledge than has been the case in the past. It is a difficult role, since BAs are often torn between business and IT constituencies as requirements change. Communication disconnects complicate the start-to-finish software delivery process.

The tools BAs are using typically do not support this changing role. Many are creating very complex requirements documents with simple desktop tools that don’t lend themselves to tracking relationships among requirements, providing traceability of ownership, or tracking requirements modifications.

Often, requirements definitions aren’t standardized, and BAs are uncertain about how much or how little documentation is “enough.” This lack of consistency is baffling to developers and testers who rely on requirements as the primary way stakeholders communicate definitions for the ultimate deliverable. Since communication gaps are the root cause of most product defects, poorly and inconsistently defined requirements contribute directly to gaps in the final product. Centralizing and standardizing requirements management can bridge this gap.

Increased stakeholder involvement across the lifecycle has also driven a trend towards eliciting and conveying requirements in a more visual way. However, PowerPoint and screen mock-ups don’t adapt well to this use case, and BAs and development teams need a better way to visually represent evolving designs.

Finally, the applications themselves have become incredibly complex. Tiered, distributed applications and composite services are often poorly documented and may or may not correspond to the business processes they support. They also span departments and even geographies, making it difficult for BAs and architects in one location to effectively document requirements for other locations.

Integration of Business Process models with requirements management not only leverages work already done as part of process modeling initiatives, it also adds a visual aspect to requirements. This can be very effective in conveying the “big picture” of how the various elements of complex applications combine to support actual business processes.

### HP Quality Center (version 11.00) and HP Application Lifecycle Management (version 11.00) Enhancements

HP is addressing these challenges with multiple enhancements to HP Quality Center and HP ALM. Enhancements are aimed at optimizing the requirements elicitation and management processes. They include better visibility, more robust BA tools, incorporation of existing process modeling work, and improved support for requirements reuse and traceability, and include:

1. Capture and maintenance of requirements in a central repository, providing a single point of truth across development, business, and BA stakeholders.

2. Standardized, template-based requirements capture and maintenance. This helps make it easier for BAs to provide the “right” level of information in a format that ensures consistency and conveys accurate information to developers and testers.

3. A collaboration platform to ensure that the right information is captured, that all stakeholders are working from the same requirements, and that when a requirement is modified, everybody is aware of the changes.
4. Visibility to where, why, and with whom requirements originate, so control and governance of the requirements management process is maintained throughout the development, test, and defect tracking lifecycles.

5. Capabilities that promote requirement and process modeling reuse to avoid “reinventing the wheel” for each new project.

6. Integration with common desktop and developer tools.

In support of these capabilities, specific enhancements include:

- **Requirement templates**: New templates enable and enforce cross-organization consistency in developing and maintaining requirements. They are designed to improve requirement quality by ensuring that Business Analysts capture the “right” data in a standard format for every project.
  - Templates have a consistent look and feel and a Word-like interface, so all stakeholders work within a familiar environment. Templates are also centrally defined and maintained, ensuring that BAs produce consistent, high-quality requirement documentation.
  - Specialized templates, such as security templates, can be defined by subject matter experts. Security specialists, for example, can build a template to their requirements, which means that their specialized expertise is injected into development and testing processes.

- **Traceability Matrix**: This function tracks relationships between requirements and testing assets, enabling better control and governance over requirements creation and modification across the lifecycle.

- **Integration of Business Process Models**: Many companies have launched initiatives to document business processes with business process modeling solutions such as Software AG-IDS Scheer ARIS and Metastorm ProVision. HP has added integration to these process models into Quality Center 11.00. Models can be automatically imported using industry-standard Business Process Modeling Notation (BPMN). This provides a common language across Business Analysts, Development teams and Quality Assurance teams by giving them the same overall view of the end-to-end process.
  - For Business Analysts, the integration provides a starting point to use when eliciting requirements. Since the business process has already been specified at a high level, BAs can flesh out the models into actionable requirements as stakeholder input is gathered. In effect, it extends the value of the BPM activity by introducing “reuse” of process models as the base for requirements gathering.
  - For QA, the business process forms the basis of the test plan for the delivered product. Since today’s software is often delivered as “components” which are later assembled into composite services, this high-level process view enables QA testers to understand and test the software component in context to an end-to-end process workflow versus a stand-alone module.

- **Integration into source code repositories**: Developers can search Quality Center for requirements and defects assigned to him/her directly from the Integrated Development Environment (IDE), making it easy to associate coding activities with requirements and defects.
  - Check-in, check-out can also be integrated into IDEs, enabling developers to see requirements in context to supporting code.
  - These capabilities are role-based, so QA teams can see requirements in context to testing scenarios.
• **Improved usability:** HP has incorporated a “product usability” engineering approach to improve ease of use. Enhancements include:
  
  ◦ A new Rich Text editor within Quality Center. This “Word on steroids” capability also inherits the requirements management hierarchy structure, version control, baselining, and requirements sharing capabilities within HP Quality Center and HP ALM.
  
  ◦ For users who prefer to use Word to specify and update requirements, HP Quality Center provides Word import and export capabilities, keeping any rich text functionality intact.

**EMA Perspective**

Requirements management tools have received less attention from both vendors and IT organizations than, for example, development and testing products. This has been primarily due to the fact that, until relatively recently, requirement specification was considered to be an essentially static activity throughout the design, development and testing phases of the application lifecycle. Because of this lack of flexibility, however, software projects were notorious for failing to deliver on time, on budget, and/or on features.

Iterative software development lifecycles evolved as an effort to improve the quality of software deliverables with ongoing input and reviews by stakeholders. The nature of such reviews puts more emphasis on requirements management, since requirements almost always change as the project develops.

With these enhancements, HP has done a good job of adapting requirements management to the realities of today’s development methodologies. By tying requirements management to both application lifecycle management and quality management, HP has built visibility and consistency across the start-to-finish process. In addition, these enhancements open up the toolset to stakeholders—including Business Analysts and Line of Business representatives—who may otherwise have avoided such tools because of usability issues.

The integration with Business Process Modeling tools is a definite plus for companies that have invested in business process modeling activities. This is particularly true in view of the fact that many of today’s “applications” are, in fact, composite services that instantiate all or part of an end-to-end business process.

The level of planning and integration that went into these enhancements represents a significant investment for HP Software. Such investments signal a willingness to continue to evolve the products to support changing roles and methodologies. EMA sees HP Software’s direction in this regard as very positive, and as a differentiator, particularly for companies actively engaged in business process modeling and/or iterative application development methodologies.