



EKI Case Study

Business and technology consulting firm delivers a web based financial system with high quality control standards adopting CSTE principles and concepts in the test execution phase.

Electronic Knowledge Interchange (EKI) faced with the need of developing a testing execution approach to release a vital project to a major provider, adopted CSTE principles and concepts as a set of processes to perform testing. CSTE principles and concepts were tactically aligned to EKI's business model to deliver high-quality standards.

The Customer

Corporate Headquarters located in Chicago, this consulting firm specializes in delivering measurable business value to mid to large size corporate and government organizations, industry leaders in finance, healthcare, government, retail, manufacturing, consumer packaged goods, food and hospitality, technology, legal, and non-profit organizations.

Business Need

The client needed to implement an effective testing approach to deliver a critical system, originally written in PowerBuilder (client-server) to Microsoft .NET (web-based) and document a detailed user guideline outlining the new look and feel of the system within a 5 months time frame. EKI required having a sound testing execution model in place to achieve this milestone.

EKI chose to follow a 'process-oriented' rather than a 'result-oriented' testing approach to validate and verify new requirements as well as existing functionality of this financial system, the approach had to offer long-term piece of mind and repeatable steps for every testing project undertaken in the future.

The Challenges

- New technology being used by development team.
- Outdated procedures to document requirements.
- High-level functional specifications.
- High-level design specifications.
- Aggressive deadlines.
- Validation of existing and new functionality.
- Lack of testing vocabulary.
- Lack of defect tracking tool.
- Virtual teams -
 - Chicago, IL
 - Monterrey, Mexico
 - Mexico DF, Mexico

Solution - Testing Approach

Softtek forged an alliance with the client to adopt a suitable manual testing execution effort implementing CSTE knowledge domains to meet the business need. The project started in June 2005 ending in November 2005. By year 2005, the CSTE Common Body Of Knowledge was composed of 12 knowledge domains, some of these domains were scrutinized during the implementation of this testing effort.

The testing approach involved the following phases and tasks relying on the principles and concepts from CSTE Common Body Of Knowledge:

- Assessment of the Software Development Plan and Status -
 - Assessing client's development process
 - Assessing client's project schedule
 - Assessing client's existing documentation

- Building a Software Testing Strategy -
 - Establishing a test strategy (*CSTE Knowledge Domain 1 – Test Principles and Concepts/ Developing a test strategy*)
 - This test strategy addressed risks to the client and presented a process to reduce those risks during the test execution of this new web based system.

- Establishing a Software Testing Execution Effort -
 - Acquiring and studying the test strategy
 - Determining the type of development project
 - Determining the type of software system
 - Determining the project scope
 - Identifying the tactical risks
 - Determining when testing should occur
 - Building the system test plan

- Implementing Traditional Testing Life Cycle -
 - **Risk Analysis** (*CSTE Knowledge Domain 1 – Test Principles and Concepts/ Developing a test strategy*)
 - Documenting and implementing a test strategy based on EKI's quality attributes.
 - The quality attributes for this test strategy were gathered in a debriefing with the client

 - **Test Planning** (*CSTE Knowledge of Test Planning/ Knowledge Domain 6: Test Planning Process*)
 - Designing the test plan following CSTE industry standards, the test plan for EKI was built relying on the table of contents addressed on CSTE CBOK.

 - **Test Design** (*CSTE Knowledge of : Executing the test plan / Knowledge Domain 7: Test Design*)
 - Designing test design artifacts based on CSTE principles and concepts.

 - **Test Execution** (*CSTE Knowledge of: Executing The Test Plan / Knowledge Domain 8: Performing Tests*)
 - Standard test stages were followed during the test execution
 - Applied suggested testing techniques on CSTE CBOK

 - **Defect Management** (*CSTE Knowledge of Executing the test plan / Knowledge Domain 9: Defect Tracking and Correction*)
 - Defect attributes were implemented as outlined in CSTE guidelines. This made the defect management more structured sorting defects appropriately.

 - **Test Metrics** (*CSTE Knowledge of: Test Analysis and Reporting / Knowledge Domain 11: Status of Testing*)



- Basic testing metrics were adopted to measure the testing process providing with a better forecast to EKI management.
- **Test Results** (*CSTE Knowledge of: Test Analysis and Reporting / Knowledge Domain 12: Test Reporting*)
 - Test reporting process was fully implemented while reporting test results to management.
- Acceptance Testing (*CSTE Knowledge Domain 10: Acceptance Testing*) –
 - Acceptance testing process was proposed to the client for their acceptance testing phase; however, our testing team was not involved in the execution of the acceptance plan, but contributed to gathering the criteria and building the plan.
 - Defining acceptance criteria
 - Developing an acceptance test plan
 - Defining acceptance check list
 - Executing acceptance test plan
- Documenting User's Guide
 - New and existing functionality was outlined in a PDF document explaining how to operate the new web based system from a user perspective.

To review the detailed approach for this case study read the complete solution at:
http://www.msqa.org/Case_Studies.html

Benefits

- Provided an effective and efficient test execution strategy for EKI identifying high risks -
 - The implementation of the test strategy process outlined in the CSTE Common Body Of Knowledge, addressed the high risks of the application to test the right components of the product in the given time.
 - This test strategy focused on the specific quality attributes identified by EKI.
- EKI improved quality in software products adopting CSTE principles and concepts as part of a testing execution approach -
 - The principles and concepts outlined in the CSTE Common Body Of Knowledge led to improvements in the methods to validate and verify the software developed by EKI.
 - CSTE domains helped the client to understand and adopt a standard testing life cycle to validate and verify in-house products.
- Detected considerable amount of defects on time -
 - The defect tracking process outlined in the CSTE Common Body Of Knowledge helped the client to detect high defect rates during system testing phase.