XP in ISO 9001 Environment

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Experience Report

- Certification- Organization's Business need

- Subex and ISO Certification

- Shift from Waterfall to XP

- XP in Subex

- SDP & ISO 9001

- Project Management using **PAS**

Certification -Organization's Business need

- **Certification Demonstrates**
  - Process Capability of Supplier
  - Trust and believe to Customer

- **Third party assurance to Customer.**

Subex and ISO Certification

- Certified for ISO 9001:1994 in year 2000
- Upgraded to ISO 9001:2000 in year 2003

Initial Development Process in Subex

- Waterfall & Iterative Models

- Overhead on Development Team
  - Gap in Documentations vs. Code
  - Effective Code Reviews
  - Regression Defects

Shift from Waterfall to XP

- **Apprehensions**
  - XP and Quality Assurance?
  - XP & ISO 9001?
  - Recorded Evidence?
  - Interpretation of ISO 9001 to XP?

- **Experiment XP**
  - One XP project, others projects with traditional process.

- **Documented the process as SDP**

- **Developed a Tool**

- **Moved Completely to XP**

XP in Subex

- **Development Process**
  - *Project Initiation*
  - *Pre-requisite for Development*
  - Release Plan
  - Iteration Plan
  - System Test & Delivery to Customer

XP in Subex

- Just before release plan meeting
  - Break functional requirement in to stories
  - Define AT Scenarios
  - Sort the stories based on value to the customer
  - Sort the stories based on risk
  - Identify timeline

XP in Subex

- **In Release Plan Meeting**
    - Team brain storms stories
    - Estimates stories based on the facts
- **Outcome of Release Plan**
    - Scope – List of stories
    - Story Estimates
    - Capture the above details in PAS

XP in Subex

- Iteration Plan
  - Stories broken in to tasks
  - Task estimated by team
  - Task prioritized based 'Value', 'Risk'
  - Capture details in PAS

- Steering
  - Developer Pick task in round robin
  - Developer Estimate task
  - Pair with other developer
  - Write Unit Test
  - Write Code, Refactor Code
  - Run Unit Test
  - Verify Story- Run AT
  - Close Story
  - Standup & Update PAS

XP in Subex

- Tests Before Product Release to Customer
  - Smoke Test
  - End to End Testing
  - System Test & Release

SDP & ISO 9001:2000

- XP and Surveillances Audit
  - Initial Apprehensions from Quality Registrar Auditors
  - Mainly non-availability of SRS, documented design, Code Review Records
  - Requirement Trace-ability etc
- Non Conformance & Surveillances Audit
  - No Non-Conformance from last five Surveillances Audit (2 and half years)

SDP & ISO 9001:2000

- Planning, Requirement Analysis
  - > 7.1: Planning of product realization
    - **Subex Development Process as realization process**
  - > 7.2 Customer-related processes
    - 7.2.1 Determination of requirements related to the product
      - » **SDP: MRD, DSD, DGD- Functional Specification, Scope**
    - 7.2.2 Review of requirements related to the product
      - » **SDP: MRD, DSD, DGD reviewed by Sr. PM, PM, Test Lead**

Reconciling SDP with ISO 9001:2000

- Development and Verification
  - \> 7.3 Design and development
    - 7.3.1 Design and development planning
      - » **SDP: PM – Release Plan- Define Scope**
    - 7.3.2 Design and development inputs
      - » **SDP: PM - Writes Stories, Writes Test Scenarios**
    - 7.3.3 Design and development outputs
      - » **SDP: Completed Stories, AT Results, Release Notes**
    - 7.3.4 Design and development review
      - » **SDP: Iteration Plan, Pair Programming, UT & Daily Standup**

Reconciling SDP with ISO 9001:2000

- Development and Verification
  - \> 7.3 Design and development
    - » 7.3.5 Design and development verification
    - » **SDP: AT Execution results**
    - 7.3.6 Design and development validation
      - » **SDP: AT Execution**
    - 7.3.7 Control of design and development changes
      - » **SDP: CCB**

PAS and SDP

- PAS – Process Automation System

- Used as a Knowledge Management System

- Also for Project Tracking & recording

  > Project Initiation

  > Resource Planning

  > Tracking of Release Plan, Iteration Plan

  > Defect Tracking

  > Change Control Board

Thanks