

# Reconciling XP and ISO 9001:2000

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# Experience Report



- Certification- Organization's Business need
- Subex and ISO Certification
- Shift from Waterfall to XP
- XP and SDP
- Reconciling XP with ISO 9001:2000
- Project Management using **PAS**

# Certification -Organization's Business need



- Certification Demonstrates Process Capability of Supplier
  - Standard and Audited QMS gives **trust and believe** to customer
  - Certification enhances the level of trust between customer and supplier
- Documented Quality Management System gives **third party assurance** to Customer.

# Subex and ISO Certification



- Certified in year 2000 – ISO 9001:1994
- Moved to ISO 9001:2000 in year 2003

# Traditional Development Process



- Development Process in Subex
  - Waterfall Model
  - Iterative Model
- Process Overhead
  - Document vs. Code
  - Code Reviews & Records
  - Regression Defects

# Moving Towards Agile Process



- Need of Agile Process
- To Deliver faster
- Reduce process overheads

# Shift from Waterfall to XP



- Apprehensions
  - Are XP and Quality Assurance is incompatible?
  - Compatibility of ISO 9001 and XP?
    - > Maintenance of Record?
  - Interpretation of ISO 9001:2000 to XP?
- Experimental XP in projects
  - One XP project, others on Waterfall.
  - Documented the process
  - Moved Completely to XP

- Development Process
  - *Project Initiation*
    - > *Proposal, Contract, RFP etc.*
  - *Pre-requisite for Development*
    - > To interface with other department like product management, Implementation etc.
  - Release Plan
  - Iteration Plan
  - Deliver to Customer



- *Project Initiation*
  - Project Scope
    - > MRD
    - > Delivery Scope Document
  - Project Milestone
    - > Define release phases
  - Identify resources
    - > Hardware, Software
    - > Human Resource and identify role in project
      - PM represents Customer (Proxy) also acts as COACH
      - PL as Tracker
      - Developer and
      - Tester

- Pre-requisite for Development
  - > Core product– MRD and brief FS
  - > Customization – DGD
- Getting ready for Release Plan: Story Writing
  - > Break functional requirement in to stories
  - > Define AT Scenarios

- Release Plan
  - > PM define Timeline for release plan
    - Core Product Development - 3 Months
    - Customization development
      - » Based on delivery scope
      - » Phased delivery
  - > Team Estimates stories
  - > Stories are prioritized in order of 'Value' and 'Risk'
  - > Scope -Based on story estimates and release time line

## ■ Iteration Plan

- Stories broken in to tasks
- Task estimated by team
- Task prioritized based 'Value', 'Risk'

## ■ 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

- Iteration Plan
  - > On Iteration End Date
    - Close Completed Stories
    - Calculate Team Velocity
    - Calculate Individual Velocity
    - Move in-completed stories to next iteration
- Release Plan
  - > Recover – Re- plan remaining stories
    - Increase/Reduce scope of release plan or
    - Inform Customer
- Deliver to Customer
  - At the end of Release plan
    - » System Test & Release

# Reconciling SDP with 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
- Non Conformance & Surveillances Audit
  - > Project Management through Web Based System (PAS)
  - > No Non-Conformance from last four Surveillances Audit

# Reconciling SDP with 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