Company Profile

Telecom equipment manufacturer

- Base quality model was ISO-9000 (TL-9000)
- One site had passed SW-CMM level 2 in Jan. 2000.
- SW-CMM was used to prioritize improvements
- 1000+ hardware & software engineers
- 3 SEPG members covering hardware and software
- 3 basic product lines
- Passed ISO-9000-2000 & TL 9000 in May 2003
- An internal assessment in July 2003 indicated that organization had achieved Level 3 goals in all areas except Training KPA.
- Division was downsized to fewer than 100 engineers by January of 2003.

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Systems Engineering

Creation of a Systems Engineering Team

- Hardware and software engineers who are most knowledgeable about the product.
- Process definition and role definition
  - Assist product management with requirements
  - Wrote engineering specifications
  - Perform allocation to components
  - Communicate quality goals to design teams
  - Arbitrate design debates
  - Assist in prioritizing test cases
  - Assist manufacturing with product customization procedures
  - Assist with early customer installations

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Using SE to Solve a Problem

Problem: “System Test takes too long.”

Cause: The matching up of all the hardware and software components was not consistent. Hardware components were often prototypes and different test beds could have different revisions of components. Some combinations would not work together.

Solution: Integrated configuration management and change control across hardware and software. Product integration teams smoke test the “build” before system test execution. Detailed tracking of configurations tested and results. Prototype hardware updated as needed.

Result: System Test time reduced by over 30%.

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Evidence for the Community

Overall maturity profiles

- Time to move up

Other benchmarking tools

- Staff level dedicated to process improvement
- System-wide benefits
  - Release cycle time, productivity, sales/employee, cost of quality reduction, customer satisfaction
  - Can be displayed as percent change over time

Case studies

- Specific, measured benefits by PA or process
- What additional quality model is used in your org.?
- What is the correlation between overall progress and customer satisfaction, revenue or market share?

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Interpreting Evidence

Learn to use evidence from internally-conducted audits and mini-appraisals (ISO)

Other measures of process adherence

- Surveys, monitoring behavior
- SPC

Cases demonstrating process tailoring

Effects of organization size and industry

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What do people need to inform decisions?

Process and organizational styles

- Structures and dynamics for high-performance teams
- Styles for teams of teams
- Dealing with geographical dispersion

Case studies

- What was the organization's (GQM) rationale for the metrics used?
- How do we know the data is reliable?

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