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The Unseen Benefits of the Change Request Process

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Georgia Tech Research Institute (GTRI) Overview

- Unit of the Georgia Institute of Technology
- 1200+ employees
- 70% of research employees hold advanced degrees
- Wide variety of products
- Customers include federal and state government; and industry
- Competitively bid projects range greatly in size and duration
Topics to Cover

• What is a problem report
• What a problem report is not
• Why problem reports are a good thing
• How problem reports fit into your development process
• Problem report lifecycle
• Types of information to collect
• Problem report metrics
• Summary
What is a Problem Report?

• PR, SPCR, Bug, OCR, CR, EPR, ECR…
• Project requirement
• Creates a paper trail
• Documents changes at any point in development cycle
• Easy PM tool (How are we doing?)
• Part of release documentation
• Business development tool
What is a Problem Report?

- Part of the CMMI v1.2 Configuration Management Support Process Area ML2
- Specific Practice: SP 2.1 *Track Change Requests*
- Typical Work Product: Change Requests
- Subpractices:
  1. Initiate and record change requests in the change request database.
  2. Analyze the impact of changes and fixes proposed in the change requests.
  3. Review change requests that will be addressed in the next baseline with the relevant stakeholders and get their agreement.
  4. Track the status of change requests to closure.
What a Problem Report is Not

- Not optional
- Not a personal performance indicator
- Not a singular project tool
- Not a contest
- Not only for S/W
  - Documentation
  - Systems/Hardware
  - COTS
  - Subcontractors
  - Process
Why Problem Reports are a Good Thing

• Great communications tool
• Provide a status snapshot
• Manage clients and subcontractors
• Issues don’t get lost
• Help control the product
• Bring new hires up to speed
• Business development
• Help make informed decisions
How Problem Reports Fit Into the Development Cycle

• At what point during the process should problem reports be written

• Who should see problem reports
Problem Report Lifecycle

- Submit
  - Review
    - Reject
    - Research
      - Fix or Implement
      - Verify
        - Close
Types of Information to Collect

• Unique ID
• Description
• State of problem report
• Functionality or application
• Where in the process it was written
• Severity
• Priority
• Dates
• Estimations
Problem Report Metrics

- Open vs. closed
- Where defects are introduced
- Closure rate
- Days to verify
- Open per function or application
- When defects are found
Problem Report Graphs - Where Found

The diagram shows the number of problem reports found during various stages of the development process. The stages include:

- **Requirements**
- **Design**
- **Unit Test**
- **Integration**
- **System Test**
- **Acceptance**
- **Operational**

The vertical axis represents the number of problem reports, ranging from 0 to 40. The integration stage has the highest number of reported issues, followed by unit test and system test. Requirements and design stages show a relatively lower number of issues compared to other stages.
Problem Report Graphs - Where Found
Problem Report Graphs – Status

- Submitted: 25%
- Hold: 20%
- Reject: 12%
- Research: 10%
- Fix: 5%
- Verify: 8%
- Closed: 20%
Problem Report Graphs – Status

- Submitted: 35%
- Hold: 8%
- Research: 7%
- Fix: 10%
- Verify: 5%
- Close: 5%
- Reject: 30%

Legend:
- Submitted
- Hold
- Research
- Fix
- Verify
- Close
Problem Report Graphs – Severity

- 5-Enhancement
- 4-Inconvenience
- 3-Moderate
- 2-Severe
- 1-Critical
Problem Report Graphs – Priority

- Low
- Medium
- High
Excuses

• Takes more time to document the change than to actually make it
• This will reflect poorly on my work
• I don’t want the customer to know what our problems are
• Stop writing problem reports so we can release
Summary

• Simple way to gain project insight and make informed decisions throughout

• Good project communications tool

• Helps keep things under control

• Don’t misuse

• “Tool” should support your process and needs. Consider things like web interface, queries, report generation, customization or integration
Questions?
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