Effective Quality Assurance (QA) on Small Projects

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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
• More Info: http://www.gtri.gatech.edu/
The Function of QA

- Objectively evaluates performed processes against the applicable process descriptions, plans, and procedures
- Objectively evaluates work products against the applicable standards and procedures
- Identifies and documents noncompliance issues
The Function of QA (cont)

- Provides feedback to project staff and managers on the results of quality assurance activities
- Ensures that noncompliance issues are addressed
- Feeds project-developed improvements back to Engineering Process Group
Small Project Assumptions

- A small project has 25 people or less
- Project team generally works together on all phases of product development
- Must trade-off limited resources
- Testers are often the developers
- Need independent inspection at critical phases
- Quality engineers must have technical expertise to add value on a small project
Very Small Projects (5 or less)

- May not have adequate funding to support even minimal QA activities
- Probably need more outside guidance and independent reviews (QA)
Outline

• Develop a generic QA plan
• Hire and/or recruit Quality Engineers highly qualified in the product development field
• Mentor project team
• Analyze project and product risks
• Build a strong base for quality
• Add value by reducing risk
Develop a Generic QA Plan

• Developing a QA plan from scratch for each project is too expensive

• Many QA activities are similar between projects

• Tailoring a generic QA plan and schedule is cost-effective, and is based on:
  • Risk
  • Project team experience
  • Customer requirements
  • Project schedule
  • Project deliverables/milestones
QA Plan Guideline

• QA Tasks
  • Start-Up Tasks
  • Periodic Reviews of QA Activities with all levels of organization
  • Mentor Project Team
  • Support Customer QA
  • Resolve Disputes
QA Plan Guideline (continued)

- Standards, Practices, and Conventions
- Reviews and Audits
  - List of required reviews (each phase)
  - List of required audits (each phase, deliverables)
  - Peer review guidelines
- QA Schedule Template
Hire/Recruit Qualified – Quality Engineers

- Technical and managerial experience
- Knowledgeable in appropriate technical areas
- Should be capable of doing “real work”
- Recognized by project team for their experience and competency
- Able to abstract and share information across projects
Mentor Project Team

- Technical areas
- Management areas
- New processes
- Existing tools and processes
- Attitude
Analyze Project and Product Risks

- Specific team members
  - Compliant vs. noncompliant
  - Experienced vs. inexperienced
- Phases of development
- Cost of re-work or failure
- Familiarity with the subject area
Build a Strong Base for Quality

- Leverage "star players"
  - spread across project teams
  - use to develop processes
- Praise "star players" and reward them to the extent that you are capable
- Modify processes to the organization's best-in-class
- Create an environment where process compliance is institutionalized
Add Value by Reducing Risk

- Prioritize organizational QA activities based on project/product risk
- Communicate status to all levels of the organization, as appropriate
- Share lessons learned for all projects
- Assist the project team in developing and implementing risk mitigation strategies
- Act as “the conscience” of the project team
Questions?
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