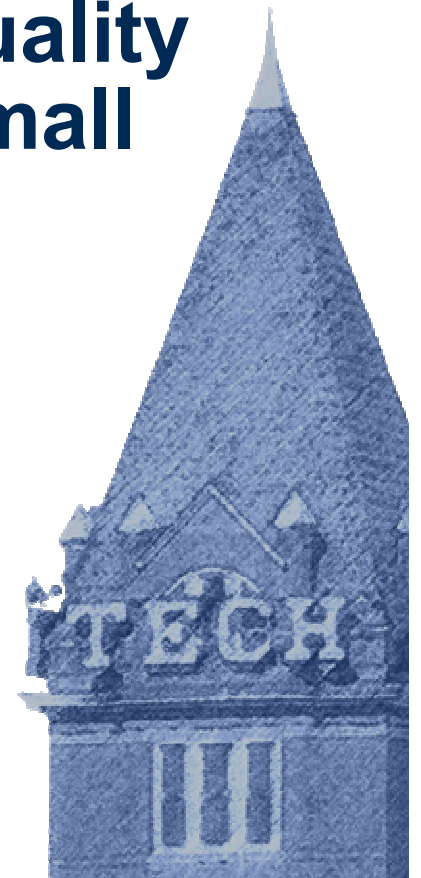


Making Process and Product Quality Assurance (PPQA) Work on Small Projects

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Who is GTRI?

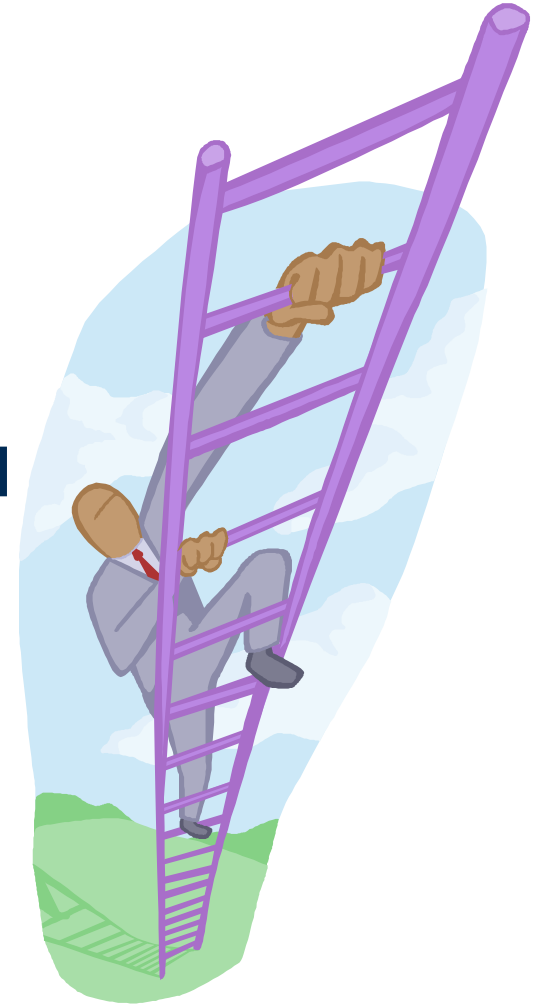


- Unit of the Georgia Institute of Technology
- 1200+ employees
- Wide variety of products
- Customers include federal, state, and industry
- Projects range greatly in size and duration
- More Info: <http://www.gtri.gatech.edu/>



Current Status

- **Assessed CMM level 3**
- **Performed gap analysis between CMM and CMMI**
- **Updating processes**
- **Implementing the new processes**
- **Not assessed under CMMI**



What is PPQA?

- Objectively evaluate performed processes, work products, and services against the applicable process descriptions, standards, and procedures
- Identify and document noncompliance issues
- Provide feedback to project staff and managers on the results of quality assurance (QA) activities
- Ensure that noncompliance issues are addressed



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)



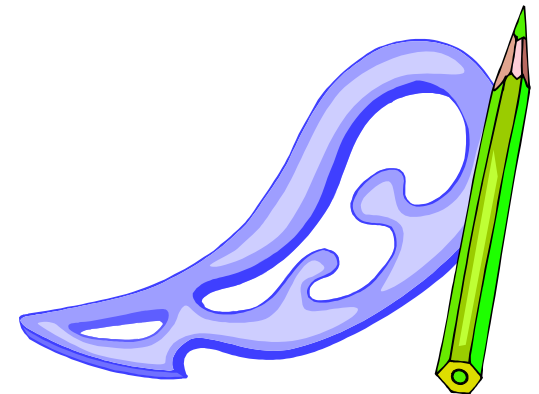
Outline

- **Develop a generic PPQA 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**



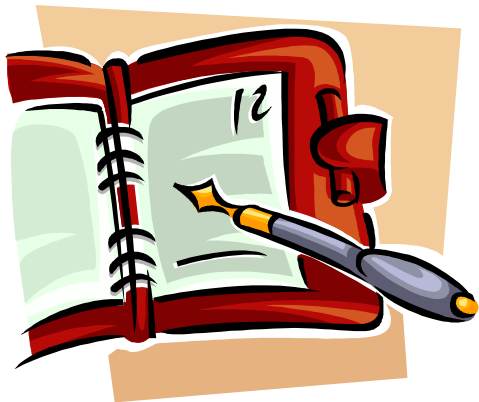
Develop a Generic QA Plan

- 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

- **Tasks**
 - **Start-Up Tasks**
 - **Periodic Reviews of QA Activities with all levels of organization**
 - **Mentor Project Team**
 - **Support Customer QA**
 - **Resolve Disputes**



- **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



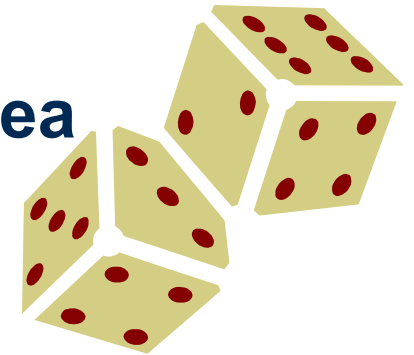
- Technical areas
- Management areas
- New processes
- Existing tools and processes
- Attitude



Analyze Project and Product Risks



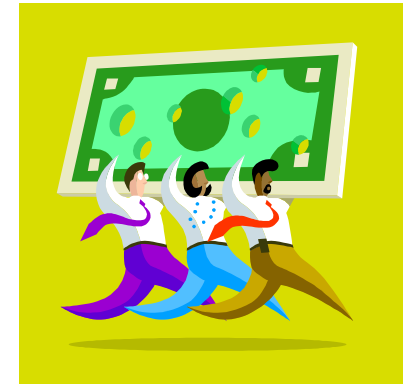
- **Specific team members**
 - **Compliant vs. noncompliant**
 - **Experienced vs. inexperienced**
- **Phases of development**
- **Cost of re-work or failure**
- **Familiarity with the subject area**



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?

