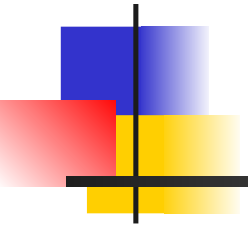


Team Roles

Roles, Goals, and Responsibilities

Your team must include these processes

PP - Project Planning

PMC - Project Monitoring and Control

CM - Configuration Management

PPQA - Process and Product Quality Assurance

REQM - Requirements Management

MA - Measurement and Analysis

Roles for Team Members

- Team Leader
- Developer (DEV)
  - Development Manager or Development Lead
- Software Architect (SA)
- Tester (TEST)
- Configuration Manager (CM)
- Product & Process Quality Assurance (PPQA)
- Project Monitoring & Control (PMC)

+ Other roles that your team needs (e.g. DBA, Product Expert).

Why Assign Roles?

A way of assigning responsibilities.

Ensures the work gets done.

Efficiently match team member skills to work that must be done.

People Are Not Confined to a Role

Try to fully involve all team members.

A person can have 2 roles, change roles, help other roles.

Why *These* Roles?

The roles contribute significantly to project success.

The process areas are from CMMI Level 2.

- Experience shows these areas are important to a *consistently* successful organization.

What Does a Role Do?

- **Goals**
  - Clear description of role's goals
  - General and specific goals
  - Measure for each goal (a way of evaluating)
  - Guidance for achieving the goal
- **Responsibilities** … aligned with the goals
- **Activities** this role performs
- **Work products** this role creates or maintains
- **Written process description** for this role – **process asset**

… *if you leave, what should your replacement do?*

Team Member Role

Responsibilities:

"*be a cooperative and effective team member*"

communicate freely and openly with other members

accept and **perform a team role**

meet commitments - personal and team commitments

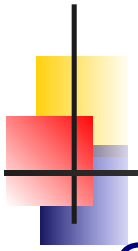
participate fully in team activities

follow the team's **defined processes**

act rationally - use facts & data, not emotions, to resolve issues

Team Member Activities

1. Participate in team meetings.
2. Report your activity each week:
    - use form provided by PMC role
    - record time spent, by task or activity
    - report (form) should answer:
        - what you did this week & time spent
        - developers: development tasks completed
        - problems encountered and how you solved them
        - what you will do next week
        - open issues or "blockage" you face, if any



Team Leader

Goals

1. Build and maintain an effective team
2. Motivate team members to work hard & cooperatively on the project
3. Resolve issues that team members bring to you
4. Be an effective facilitator in team meetings
5. Inform management(*) of progress & problems regularly

* management => instructor & TA

Team Leader Goal #2 in detail

Motivate team members to work hard on the project

"work with all team members to ensure they put in the required time, do planned work, and produce quality products" [TSP book, chapter 11]

Measures:

- team members met their earned value commitments
- team members work the hours they committed to
- team members followed the process for their role

Team Leader Characteristics

According to TSP:

1. You respect & listen to the people you are leading.
2. You try to help them perform to the best of their abilities, and recognize that capabilities differ.
3. You enjoy leading a group of peple.
4. You are able to identify key issues, problems, and make objective decisions.
5. You seek others' views and try to form concensus.
6. You are willing to make occasional unpopular decisions and press people to accomplish difficult tasks.

Team Leader Activities

1. Motivate the team members to perform their tasks
2. Run the weekly team meeting - set agenda, review progress from previous week, discuss risks, identify new problems, set goals for next week
3. Act as facilitator & time keeper at meetings
4. Report weekly status to management (instructor)
5. Help the team to allocate tasks

   Strive for a balanced project: fully assign the team

   Obtain agreement (& written record) of assigned work
6. Lead the team in producing an iteration report

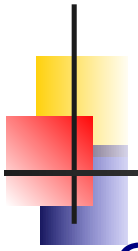
Team Leader also does Project Work

Team Leader should also have a specific role.

In TSPi, team leader is part of development team.

Not a requirement here.

You decide most suitable role. PMC is one choice.



Developers

Goals:

- Produce a high quality product that fulfills the customers requirements
- Ensure the product meets its objectives
- Produce quality documentation for the product

Lead Developer Goal:

- Fully utilize the developers' skills and abilities

Developer Activities

- Define a development strategy
- Create a design of the solution
  - ✓ conceptual design
  - ✓ high level design
  - ✓ software design and software design spec (SDS)
- Estimate the time required for each part
- Create iteration plans for producing a solution
- Implement and test each part, build the application
- Record effort and defects, track progress against plan

Some Developer Tasks

1. Develop a coding standard and use it.
2. Estimate the time for each task (iteration planning)
3. Record actual time and defects for development tasks.

Developer Start-up Activities

Create a coding standard and record it as a process asset. Review it and give to CM.

Define rules for management of design docs and source code

- where are they?
- how will you identify versions?
- what is the project layout structure?
- who can edit the code and design docs?

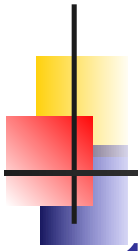
Define how to managing dependencies such as libraries.

The CM should be informed of this and may participate.

Configuration Management

Goals:

establish and maintain the integrity of work products using configuration identification, configuration control, configuration status accounting, and configuration audits.
[*CMMI for Developers*]



CM Specific Goals

1 Establish Baselines

- Identify Configuration Items
- Establish a Configuration Management System

  - ensure entire team understands it

2 Track and Control Changes

- Track Change Requests
- Control Configuration Items

CM Activities

1. Decide what artifacts you will manage.
2. Decide on one location for all electronic docs except source code (source code may be separate).
    - example: a shared Google Drive
3. Define a directory and file naming convention for all items in CM.
    - example: what should Joe's weekly activity report be named and where does it store it?
4. Document your CM plan!
5. Present a summary of your CM plan next week.
6. Maintain a complete backup of CM items.

Example of CM Artifacts

Plans - project plan, iteration plans, test plans, …

Requirements

Use Cases or User Stories

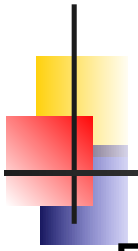
Architecture & design documents

Drawings, mockups

Process descriptions & forms - your process library

Activity reports from team and weekly summary from PMC

Test reports - as completed by testers



CM defines Control Levels

Example:

- Anyone on team can make changes (read/write).
- Only author can make changes, others can read.
- Frozen: cannot be changed, such as a release.

Tester

Goals:

Ensure the software product satisfies the requirements and is of high quality.

Tester Activities

1. Create a test plan.

   Test plan should be crafted to match features to implement in current implementation.

2. Perform tests of developer products.

   Use your test plan.

   And perform *regression tests*, too.

   Generate test report.

3. Communicate results to developers and PMC.

4. Look for ways to automate your tests.

Tester Start-up Activities

1. At beginning of project, design a test plan form for your project. Study existing test plan forms, but don't be a slave.
2. Participate in analysis of requirements.

   Test the requirements...

   Clear and unambiquous?

   Testable?

   Unique?

   Consistent?

   Simple?

   Complete?

Project Monitoring & Control (PMC)

Purpose

Provide an understanding of the project's progress so that corrective actions can be taken when the project performance deviates significantly from plan.

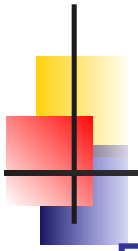
Goal

Enable project to produce a high-quality product on time.

Detect and correct problems related to schedule, progress on product, or failure to meet commitments.

Project Monitoring & Control (PMC)

1. Monitor Project Against Plan
   - Monitor Project Planning Parameters
   - Monitor Commitments
   - Monitor Project Risks
   - Monitor Data Management
   - Monitor Stakeholder Involvement
   - Conduct Progress Reviews
   - Conduct Milestone Reviews
2. Manage Corrective Action to Closure
   - Analyze Issues
   - Take Corrective Action
   - Manage Corrective Action



Process & Product QA (PPQA)

Purpose

Provide objective insight into the quality of processes and work products.

Goals

Process & Product QA (PPQA)

1. Objectively Evaluate Processes and Work Products

- Objectively Evaluate Processes
- Objectively Evaluate Work Products and Services

2. Provide Objective Insight

- Communicate and Ensure Resolution of Noncompliance Issues
- Establish Records

Example of PPQA practices

Product:

- verify that work products conform to team's standards
- monitor the level of defects found and fixed. If its above target or getting worse, discuss and recommend action.

Process:

- verify that reported effort is consist with actual work
- evaluate in-class presentations and record results
- identify lessons learned that can improve processes in the future

Implementing your Goals

Each role has goals that contribute to project success.

How you achieve the goals is flexible –

study the goals and define your own practices

document them (your process description)

evolve based on experience and need

but...

there are some minimum requirements

Agile Hint

Try to create an "*information radiator*".

Make information highly visible & easy to access.

Examples:

- Task board, like waffle.io
- Burn-down or burn-up chart (show % work completed)
- Post all activity to a forum (Hip Chat)

Resources

1. CMMI

- **www.software-quality-assurance.org**
- **www.sei.cmu.edu/cmmi/** - CMMI home at S.E.I.
- **www.tutorialspoint.com/cmmi**

  Look at "process areas" page
- *CMMI Distilled* or *CMMI for Developers* (book)

2. TSP - desciption & explicit instructions for roles.

See TSP book or TSPBOK (in articles directory).

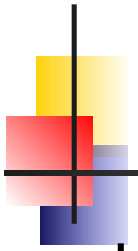
Resources (2)

3. *Software Project Management* books & web sites.

The roles here are standard in software projects, and many book describe them.

Jalote, *Software Project Management in Practice* is a good one. Describes software projects at InfoSys.

Suggestion



Use the resources for guidance.

- pay attention to the goals.

Tailor the practices to your project needs.

We don't want extra e-paperwork with no benefit.

Fowler's suggestion (UMLD, chapter 2):

start with a few practices, add more over time.