Công Cụ & Phương Pháp Thiết Kế - Quản Lý (Phần Mềm)

TRAN KIM SANH
Instructor of DTU

Email: trankimsanh@dtu.edu.vn
Tel: 0987 409 464

Defining a Technical Review Process

Contents

1. Types of Technical Reviews
2. What is an Inspection Process?
3. What to Consider When Building Your Inspection Process

Question

- **How do we define a Process?**
  A. Input - Process – Output
  B. Process - Input- Output
  C. Output - Input – Process
  D. Process - Output – Input
- **The best period of time for one Sprint Backlogs in Scrum process is?**
  A. 2->4 weeks
  B. 3->5 weeks
  C. one week
  D. one month

Question

- **It is better to use process in a (an)…**
  A. Individual
  B. Small team
  C. Large Team
  D. Other solution
- **What are the fundamentals of Software Development Process?**
  A. The requirement, Analysis, Code
  B. User documentation, User supports
  C. Review, Testing...
  D. All above

Question

- **The process you can see insight is…**
  A. White Box
  B. Black Box
  C. A and B are correct
  D. A and B are not correct
- **What is the correct stage order?**
  A. Task, Entry, Validation, Exit
  B. Entry, Validation, Task, Exit
  C. Exit, Validation, Task, Entry
  D. Entry, Task, Validation, Exit

Types of Technical Reviews

- Walkthroughs
- Code Reading
- Pair Programming
- Inspections

Walkthroughs

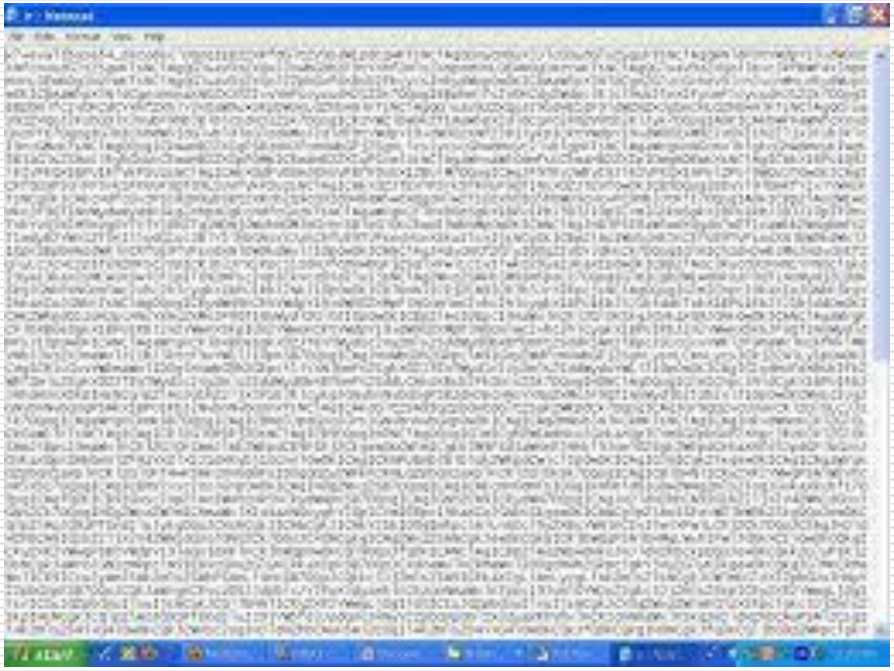
- Informal (any meeting where developers review work to improve its quality)

Pair Programming

- Reviews are built in

Code Reading

- More formal, but only applies to code
- Reviewers read code and provide feedback



Inspections

- Very formal
- Specific roles
- Checklists, Inspection Report, etc.

What is An Inspection Process?

- Multiple names: software inspection, code inspection, Fagan inspection.
- "…a formal evaluation technique in which software requirements, design, or code are examined in detail by a person or group other than the author to detect faults, violations of the development standards, and other problems…"
  - To detect and identify software element defects early
  - Correcting defects early has a direct impact on quality
- ANSI/IEEE Std. 729-1983 *Standard Glossary of Software Engineering*

Process Steps

- For Inspection:

Phases	Description
Planning	Establish schedules. Choose inspectors Obtain materials
Overview	Provide background to understand inspection materials
Preparation	Individually study inspection material
Meeting	Find and record defects as a team
Rework	Resolve problems identified at the inspection meeting
Follow-up	Verify resolution of all problems found during inspection

Who Is Involved

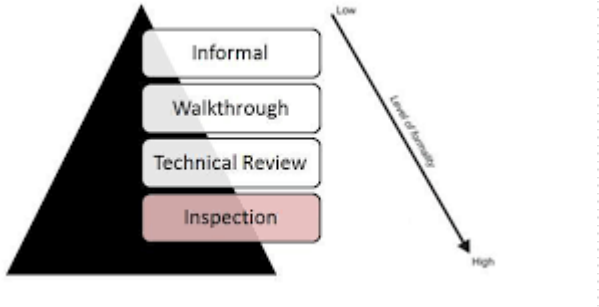
- For Inspection:
  - Roles:
    - ✓ Author
    - ✓ Moderator
    - ✓ Inspector (reviewer)
    - ✓ Recorder
    - ✓ Reader / Timekeeper
  - When:
    - ✓ Before the inspection meeting
    - ✓ During the inspection meeting
    - ✓ After the inspection meeting

Inspections Differ From Reviews

- Inspection checklists focus the reviewers attention on areas that have been problems in the past
- Inspections focus on defect detection, and not correction
- Reviewers prepare for the inspection meeting beforehand and arrive with a list of the problems that they've discovered
- Distinct roles are assigned to all participants
- The inspection moderator isn't the author of the work product under inspection

Inspections Differ From Reviews

- The inspection moderator has received specific training in moderating inspections
- The inspection meeting is only held if all participants have adequately prepared
- Data is collected during each inspection meeting and is fed into future inspections
- General management doesn't attend inspection meetings unless the artifact being inspected is a plan or other management material

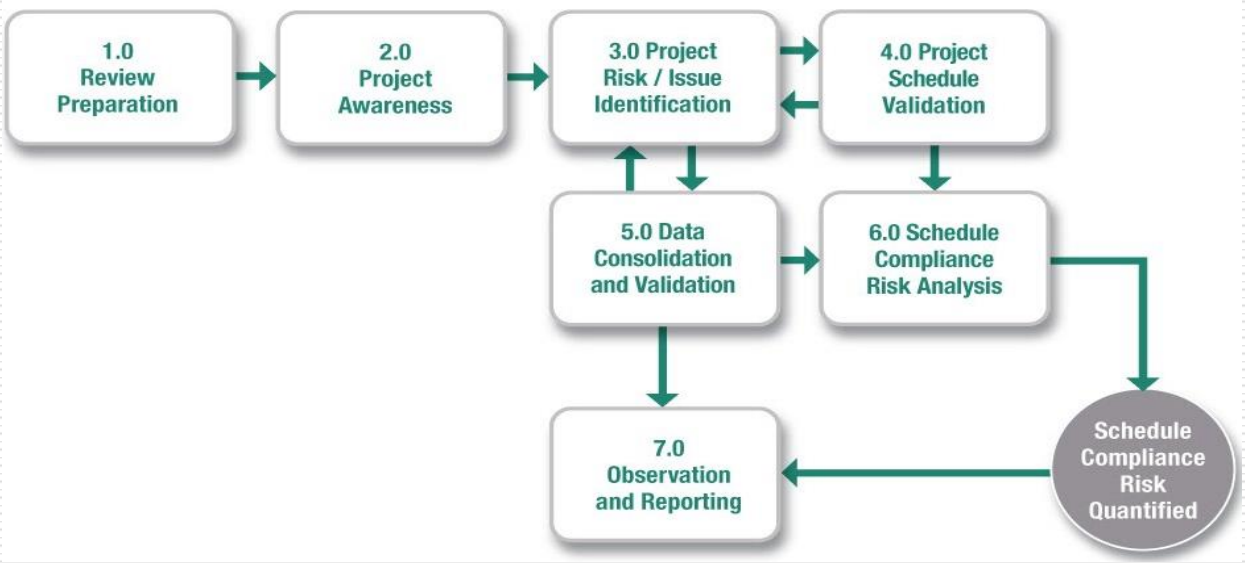


What to Consider …

1. What are the goals of your process?
2. How will you know if it is valuable?
3. What steps will your process require?
4. Who will need to be involved?
5. What is the process timing?
6. What are the process inputs and outputs?
7. What will prevent your process from being successful?

Process Goals

- What benefits will the process bring?
- For an Inspection Process:
  - Defects removed
  - Team cross-training
  - Others ...

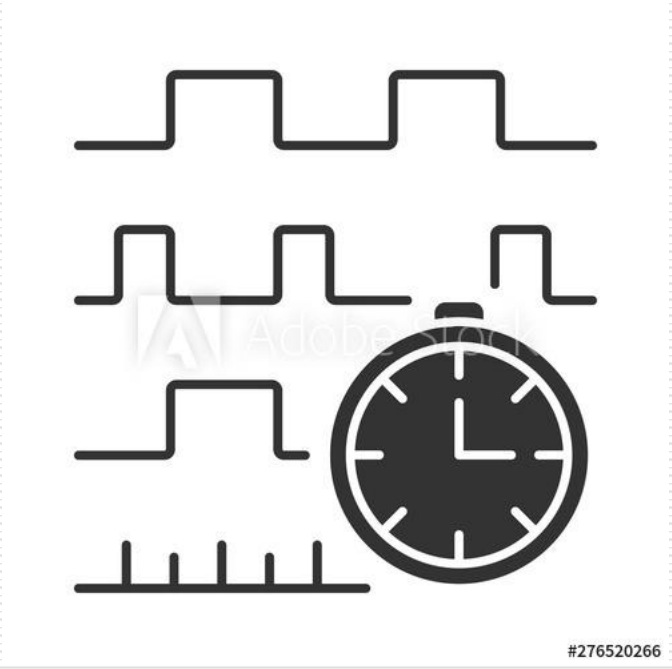


Process Value

- Cost versus Benefit Analysis
- For an Inspection Process:
  - Benefit:
    - ✓ $ Saved from defects removed early
    - ✓ Value of team cross-training
    - ✓ Others ...
  - Cost:
    - ✓ Time and $ (overhead) of process
    - ✓ Others ...
- Be sure to define the metrics needed to validate process value

Process Timing

- What is the task sequence?
- Are there any task dependencies?
- Can there be parallel tasks?
- Are there any special timing issues associated with the process?



Process Inputs and Outputs

- Example inspection process input:
  - Artifact being inspected
  - Standard(s) against which the artifact is being judged
- Example inspection process output:
  - Defect list
- There are more ...

Group discussion?

- Create a checklist for java code
- Find a review report on internet
- (4 students – 10 minutes)

Process Inputs and Outputs

- Checklist
- Defect list

(C) Customer Related Risks

Following generic risks are associated with different customers

Sr.	Check Point / Defect Statement	Check Mark (√) the Appropriate Column	
		Yes	No or N/A
1)	Have you worked with the customer in the past?		
2)	Does the customer have a solid idea of what is required? Has the customer spent the time to write it down?		
3)	Will the customer agree to spend time in formal requirements gathering meetings to identify project scope?		
4)	Is the customer willing to establish rapid communication links with the developer?		
5)	Is the customer willing to participate in reviews?		
6)	Is the customer technically sophisticated in the product area?		
7)	Is the customer willing to let your people do their job–that is, will the customer resist looking over your shoulder during technically detailed work?		
8)	Does the customer understand the software engineering process?		

Note: If the answer to any of these questions is "No," further investigation should be done to assess the risk.

Referenced from Prof.Redley of CMU

Barriers to Inspection Process Success

- Culture Clash
  - You define a great process, that doesn't mean that software engineers will follow it
  - The role players and the process may need to be flexible if the process isn't working well
- Lack of Management Support
  - Managers must demonstrate that they value inspections
  - Managers must respond positively and quickly to issues found in inspections
- They are perceived as taking too much time and effort

Barriers to Inspection Process Success

- Defect Data Used Inappropriately
  - Use inspection data to measure effectiveness, improve inspections, and measure ROI
  - Don’t use inspection data for performance reviews
- Poor Timing
  - Avoid scheduling inspections during crunch mode
- Lack of Training
- Lack of a Champion
  - A champion raises the awareness and sells inspections

Barriers to Inspection Process Success

- Lack of Automation
  - Use tools to help data collection
- First Impressions do matter
  - Don’t half-heartedly do an inspection
  - Don’t become over zealous with inspections
- Inspection Meetings are used for problem solving or other discussions
  - Should just be for problem identification
- Participants exhibit unprofessional behavior when giving or receiving feedback

Process Variation

- Formal Inspections versus Less Formal Walkthroughs
  - Both have strengths and weaknesses
  - Don’t blindly adhere to a process
  - Be flexible, try new things
  - Use data, and the team, to guide you in knowing if your process is working

Summary

- Formal inspections are a specific type of technical review
- Technical reviews have been shown to be extremely effective in detecting defects, and economical compared to finding the defects later in the life cycle
- Be sure to consider the issue associated with deploying more or less formal processes

Video link

- https://www.youtube.com/watch?v=yKBfRzhIofs
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