

Blending Inspections with Agile – What's in it?

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Agenda

- What is Inspection?
- Defect Detection - Comparison
- Case Study
- Integrating inspections with Agile
- Integration with other Processes
- Conclusion

Inspections

help find defects early thereby saving overall Project cost

can be blended with any process framework

are applicable potentially to any deliverables

What is Inspection?

- A formally defined procedure
- Focuses on present and future quality of deliverables
- Provides an outside perspective

Defect Detection Methods: Comparison

Inspection :

- Applies to all the project artifacts (requirement documentation, functional and design documents, test specs, code...)
- occurs **early** in the software life cycle

Objective	Insp.	Team Review	Walk-through	Pair Prog.	Peer Review
Find issues	X	X		X	X
Measure quality	X				
Conform to spec	X	X			X
Collect data	X	X			
Educate team	X	X	X	X	
Verify bug fix	X	X		X	X
Explore alternatives			X	X	
Minimize review cost					X

Case Study

Project Details

- Type : IT Internal
- Methodology : Agile (Scrum)
- Team Size : 6
- Sprint Duration: 4 weeks

Before Inspection:

- Defects found in later phase (Severity 1 defects)
- Increase in stabilize phase duration – due to rework
- considerable rise in project costs
- Overall poor quality – defects leaking through the phases

Intended Outcome of Inspection

- Find Issues
- Measure quality
- Conform to specification
- Collect data
- Educate team
- Verify the bug fix
- Explore alternatives
- Minimize review cost

How did we execute

During Sprint Planning we identified

- Inspection tasks

- Inspectors

- entry and exit criteria

Estimated

- inspection duration

Daily Stand-up meeting:

- Status update on tasks

Risk/Issues : addressed appropriately

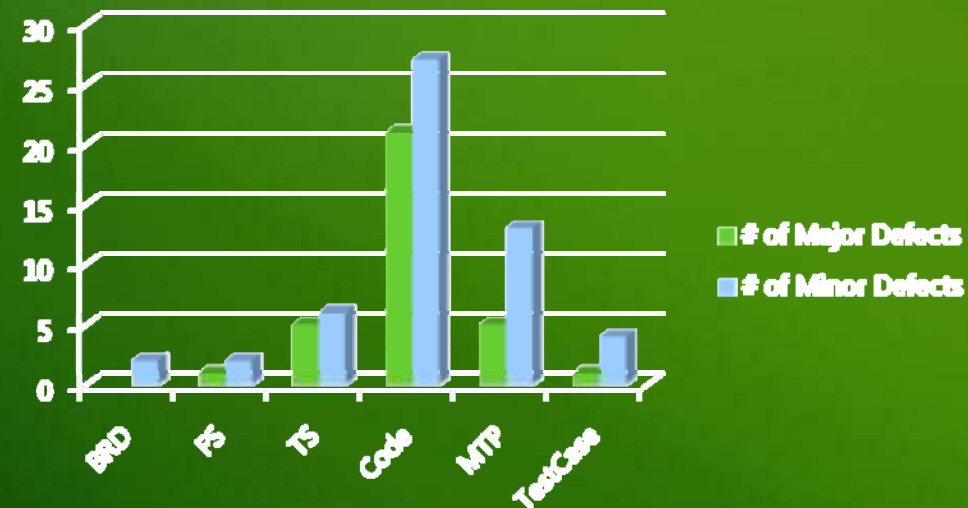
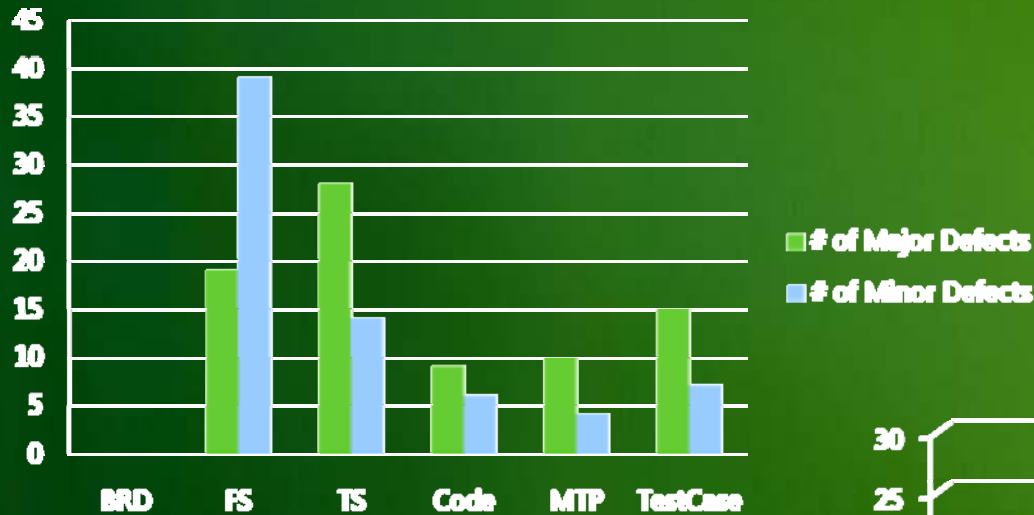
What did we monitor

- Inspection Team Yield

$$\text{Team Yield} = \frac{\text{Number of issues found by inspection team}}{\text{Total number of issues}}$$

- Is inspection enhancing improvement?
- Do we need to re-inspect ?
- Predict remaining defects (Capture/Recapture)

Defect analysis – across artifacts



2 features – artifacts inspected in the Sprint

How did Inspection help

- Find more issues
- Find issues earlier
- Find issues faster
- Measured effectiveness
- Process improvement
- Personal growth
- Promotes good behavior
- Technology transfer

Learning

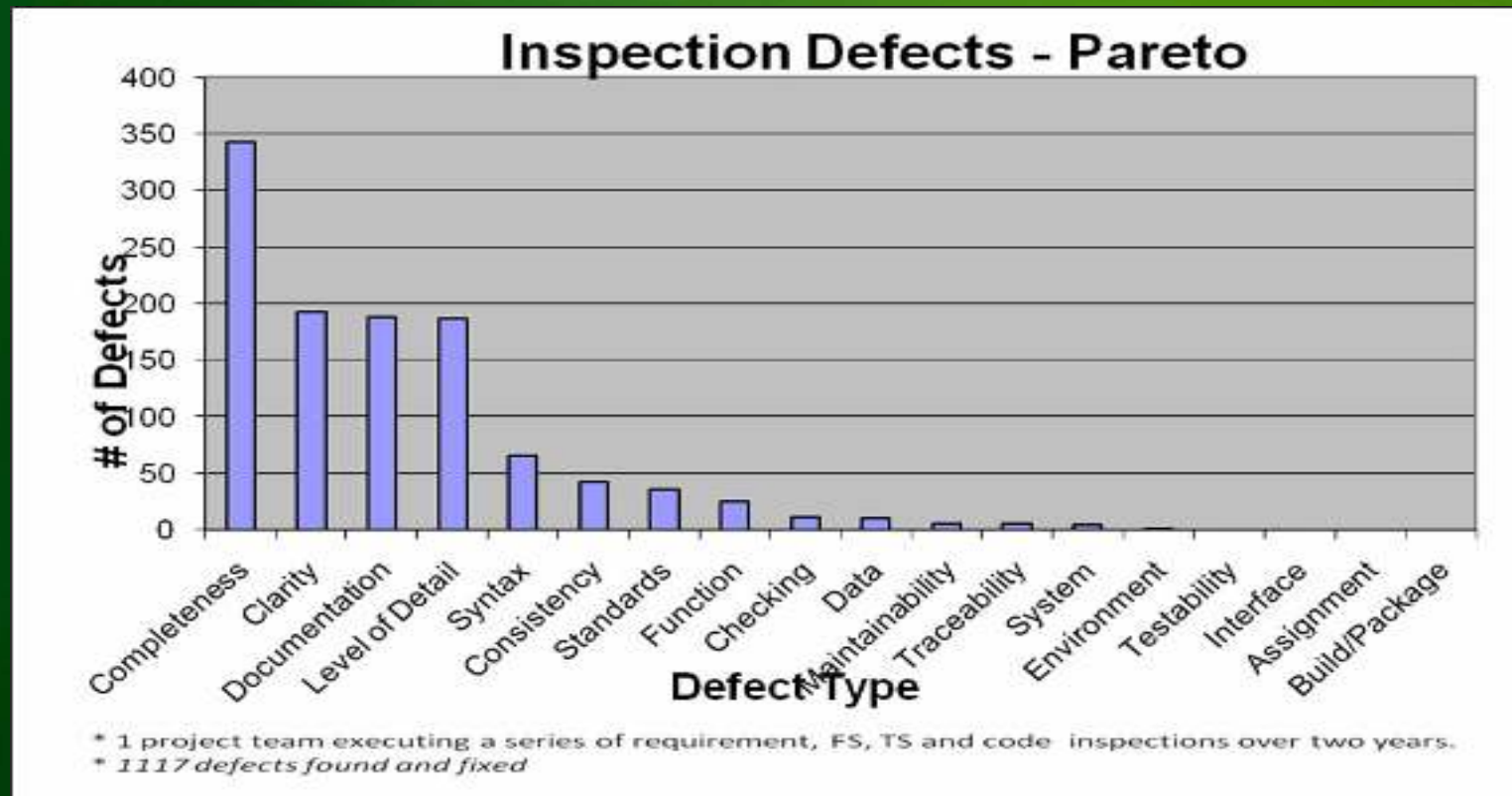
- Quality of the deliverable/work product illustrated
- Defects identified early
- Identify areas of improvement
- Identify issue patterns
- Update checklists often and accordingly acts as enabler

More inspection analysis

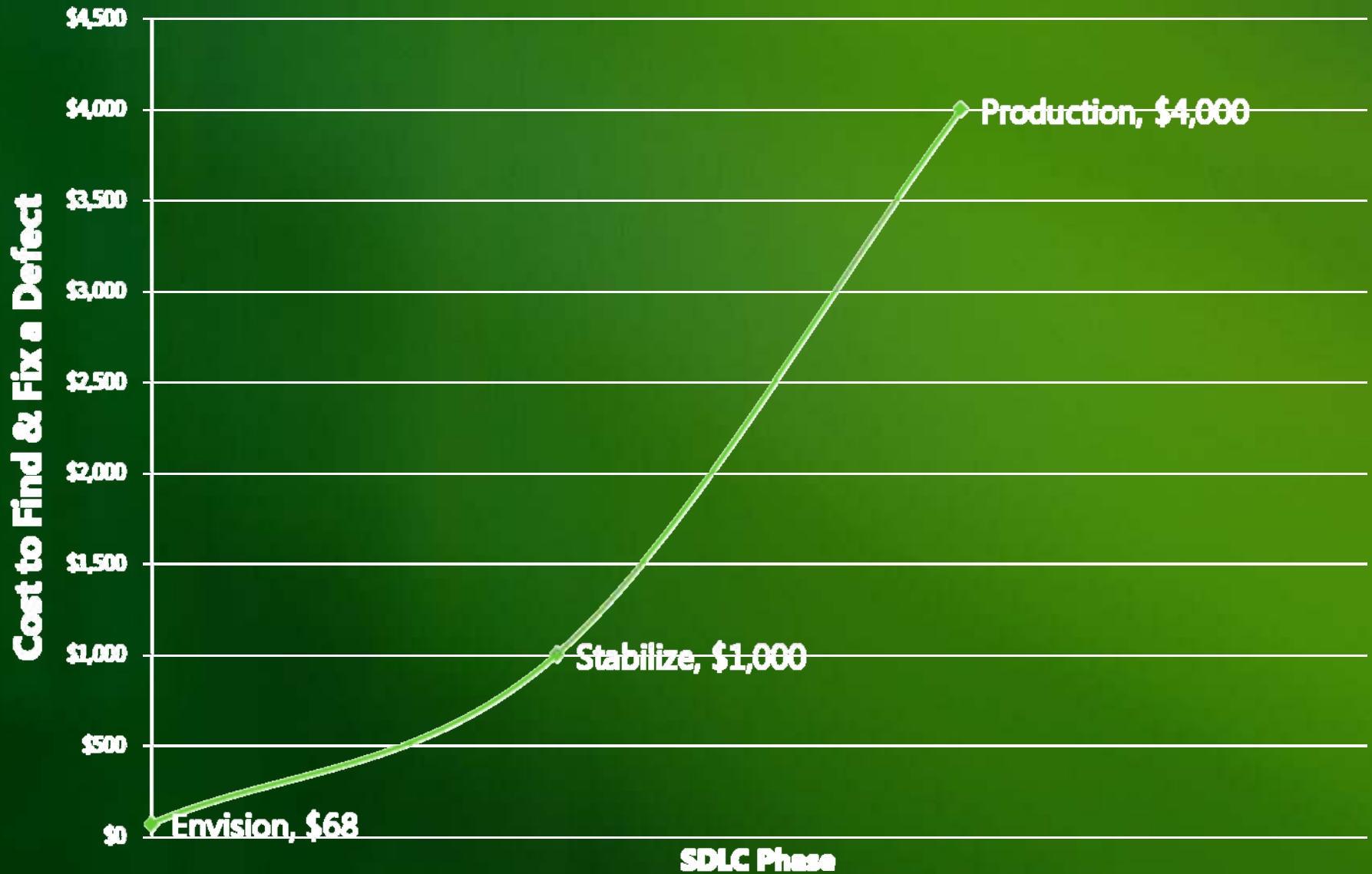
Here is some data from projects that conducted four functional spec inspections over two years
on Bug analysis

- 33% of bugs analyzed related to spec problems.
- 27% of production support escalations caused by spec gaps.

This graph shows the 1,117 Severity 1 and 2 defects that another project team found and fixed using formal inspections



Defect Cost by SDLC Phase



Return on Investment

- number of Change requests reduced by 45% after implementing inspections
- Group Inspection Yield (>75 %) – most defects found
- Review rate of the inspector played a vital role

Integration with agile

- Merge inspections with agile - it's innovative
- Work products/deliverables need monitoring - inspect them
- Agile is predictable and adaptive – plug inspection
- inspection process involves multiple individual's contribution - easier if it's planned

Challenges faced while blending

Team questioned on

How will we incorporate this task?

Who will be the inspector/s?

When is the best time to inspect ?

As we already know that Inspections

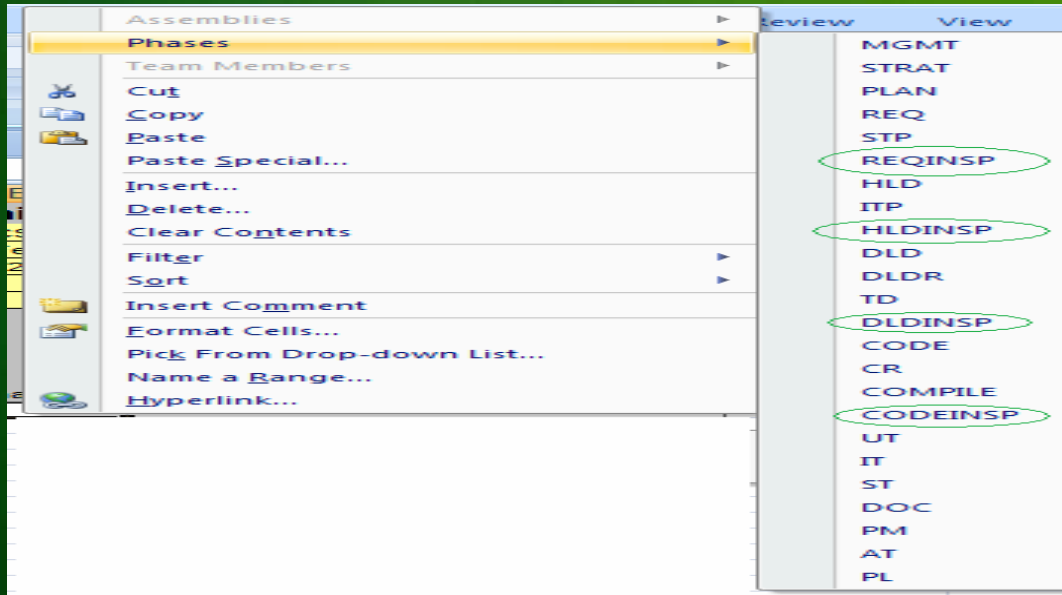
- Need planning
- Consume time
- Involve multiple individuals
- Need a motivated team of skilled inspectors for identifying issues

Things to watch while using Inspections

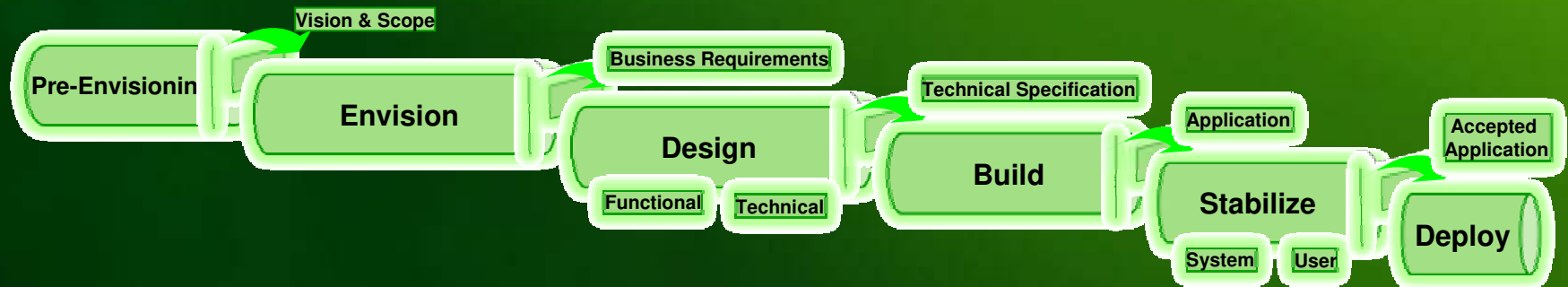
- Watch out for Process Overkill.
- Decide on the deliverables that must be inspected
- Have a pool of inspectors/SMEs identified for ease of allocating them to the deliverables
- Decide on timelines and scope inspection
- Set a criteria for identifying issues as major/minor
- Triage Meeting to classify issues as defects/change requests/clarification

Inspections in other framework

- TSP framework provides a phase for inspection



- SDLC : inspection can be at every phase for the deliverables



Can we be more efficient and effective!

Yes we can

- Analyze the metrics
- Invite high-yield inspectors
- Consequences for lack of preparation
- Focus on issues, not solutions
- Schedule time

Conclusion

- *Agile-Inspection integration helps in finding the defects early reducing overall project cost*
- *Adapting agile-inspection blended innovative process framework works well*

Resources

- Agile Project Management with Scrum (Microsoft Professional) (Paperback): Ken Schwaber, Microsoft Press
- Software Inspections: Karl Weigers, PRIS
- <http://www.sei.cmu.edu/publications>
- <http://www.mariosalexandrou.com>
- <http://en.wikipedia.org/wiki/SCRUM>
- <http://eewiki>
- Internal project team using inspection at Microsoft- IT

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