Challenges Faced by Agile Testers: A Case Study

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Research Contribution

- Goal – Identify the challenges faced by agile testers in geographically distributed teams at service organizations.

- Identified 15 challenges and solution for those challenges.

- Challenges categorized into following groups;
  - Time management (4)
  - Lack of awareness (2)
  - Scrum principle violations (6)
  - Team collaboration (3)
Research Background

- Being an Agile Tester (AT) is more challenging compared to Quality Assurance (QA) professionals in the plan-driven process.
- T.D. Hellmann and team has proposed only a proof of concept (POC) solution and did not validate or further investigate the solution.
- Related work does not capture the specific challenges faced by the ATs and the best practices to follow in service delivery organizations.
What are the challenges faced by agile testers in geographically distributed teams at service organizations?
Conduct Agile Testers Forum within organization

Prepare Online questionnaire shares with Agile tester within Organization

Data collection and Results analysis

Recommendation and conclusion

Research methodology

Segment A

Segment B

Conduct Literature Review

12 Active Projects

Face to face interviews conduct with subject matter experts

Captures during the agile tester forum
Research Objective and Findings

- Research objectives
  - Identify the challenges faced by agile testers in geographically distributed teams at service organizations.
  - Identify solutions for the challenges identified.
Demographic data analysis

**Gender Distribution**
- Female: 76%
- Male: 24%

**Agile Practice**
- Scrum Framework: 83%
- Kanban Framework: 17%

**Project Role**
- QA Lead: 55%
- QA Senior Engineer: 36%
- QA Engineer: 6%
- QA Associate Engineer: 0%
- QA Manager: 3%

**Age Distribution**
- 20-30: 12
- 31-40: 20
- Above 50: 1
- Below 20: 0

- Female percentage is high in QA practice.
- Most of the respondents play senior and lead role in projects.
- Scrum framework is the mostly used agile practice within the organization.
- Almost all the respondents are in between 20-40 age.
Research findings

Frequency of backlog grooming ceremony conduct in the project

- **Strongly Agree**: 15%
- **Agree**: 37%
- **Neutral**: 24%
- **Disagree**: 24%
- **Strongly Disagree**: 0%

Changes are not accepted within the sprint

- **Strongly Agree + Agree**: 33%
- **Strongly Disagree + Disagree**: 43%
- **Neutral**: 24%

- 24% Of respondents mentioned that backlog grooming ceremony is not conducting as per the agreed frequency.
- Only 33% respondents mentioned that they are not accepting the changes within the sprint.
Research findings

94% respondents are aware about project critical success factors, project delivery timeline, complexity, and criticality of the business.

87% of respondents agree that they are using user friendly, transparent tools to track and manage the project.

Agile team members are competent enough and they are very collaborative.

All respondents agreed software Metrics brings value to agile projects.

Team track metrics based on effort, such as Defect rate, Defect slippage rate.

Test design productivity, test execution productivity, test execution progress, and test execution rate are used to measure testing efficiency.

Some metrics focus on defects captured in the sprint, such as Defect removal efficiency, Defect to remark ratio, and Open defect aging.
Research findings

- Identified 15 challenges and solution for those challenges.
- Challenges categorized into following groups
  - Time management (4)
  - Lack of awareness (2)
  - Scrum principle violations (6)
  - Team collaboration (3)
Research findings

Time Management
- Does not have sufficient time to complete QA work on time.
- Spend additional time on updating regression test suite.
- Spend additional time on updating automation team.
- QA spill over in most of the sprints.

Lack of Awareness
- Does not care about quality standards/metrics.
- Scrum team not good in pair programming.

Scrum Principle Violation
- Project is not conducting Retrospective.
- Project is not conducting Backlog grooming.
- Definition of done is not properly defined.
- Accepting changes during the sprint.
- Story is not properly defined.
- Acceptance criteria is not properly defined.

Team Collaboration
- No team building activity – month.
- Has internal politics.
- Scrum team does not like to work in geographically distributed environment.
# Research findings

<table>
<thead>
<tr>
<th>#</th>
<th>Solutions – Time Management</th>
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</table>
| 1 | a. Introduce pair programming.  
   b. Automate the sprint n-1.  
   c. Start to build the automation component and run only after code stability achieved.  
   d. Cover unit testing by QA test on developer environment. |
| 2 | a. Write test cases to align the business flow. (re-usable business component model.)  
   b. Automate only the journey’s which are not changing frequently.  
   c. Manage data in spreadsheets, where changes can have made at one time.  
   d. Automation conduct only for stable environment. |
| 3 | a. Automation team follows the same structure used by manual testers.  
   b. Maintain catalog with changes made to manual test cases. |
| 4 | a. End-to-end deployment of services in a fully automated environment provisioning process. |
## Research findings

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<tr>
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<tbody>
<tr>
<td>5</td>
<td>a. Conduct knowledge transferring sessions on metrics and quality standards.</td>
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<td>b. Get familiar with behavioral driven development.</td>
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<td>c. Enhance knowledge on pair programming.</td>
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<td>d. Make sure all the resources completed company provided trainings.</td>
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<tr>
<td>6</td>
<td>a. Conduct workshops and training sessions on pair programming.</td>
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<tr>
<td>7</td>
<td>a. Conduct retrospective in new style.</td>
</tr>
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<td>b. Combine another meeting with retrospective ceremony. (Ex. Conduct metric analysis)</td>
</tr>
<tr>
<td>8</td>
<td>a. Reduce the frequency of backlog grooming with the time.</td>
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<td>b. Conduct backlog estimation in overlap time.</td>
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<td>c. All the requirement related communication record in agile life cycle management tool.</td>
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<td></td>
<td>d. Conduct pre-backlog grooming meeting with dev team.</td>
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<td>e. Conduct post-backlog grooming meeting with onsite/dev team.</td>
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<td></td>
<td>f. Record backlog grooming session using high quality audio and video recordings and share with offshore team.</td>
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<td>g. BA conduct grooming with client and with dev team separately. (BA act as agent).</td>
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<td>h. Conduct story elaboration with core team and client at onsite then sync with offshore dev team.</td>
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<td>9</td>
<td>a. DOD needs to get defined with product owner agreement at the contract signoff in work agreement documentation.</td>
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</table>
| 10 | a. Spend good amount of time (e.g., 6 weeks) on developing release plan.  
  b. Conduct story elaboration with core team and client at onsite then sync with offshore dev team.  
  c. Set up ground rules with the product owner and never accept changes during the sprint. |
| 11 | a. Conduct awareness session on story writing.  
  b. Maintain a separate section to mention the feedback received during the demo. |
| 12 | a. Maintain a separate section to mention the feedback received during the demo. |
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<td>13</td>
<td>a. Conduct team building activity end of every sprint.</td>
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</table>
| 14 | a. Propose innovative sprint.  
b. Conduct internal games at the end of each release.  
c. Use retrospective ceremony to do retrospective through innovative games. |
| 15 | a. Set up the ground rules with geographically distributed team (e.g., if Dev team is distributed as development team from one geo and testing team is one geo, agreement made as such, defect is count as a defect if developer not fix the defect within a day of recording”).  
b. Scrum during overlap times.  
c. Bridge conference open to talk at any time.  
d. Fix scrum for 15 min and conduct other discussion in separate forums with respective team members.  
e. Introduce games (e.g., crown awarded to the person who complete maximum no of story points)  
f. Improve soft skills of the resources. • Use collaborative tools (e.g., WebEx) |
Summary

- Identified 15 challenges and solution for those challenges.
- Time management and lack of awareness on technologies are key concerns.
- Violation of scrum principles and team collaboration are other factors of concern.
Selected references


