

Produced by  
**STeP-IN**  
Forum

# STeP-IN SUMMIT 2008

Hosted by



5<sup>th</sup> International Conference on  
Software Testing

## Centralized vs. Decentralized Test Automation

Todd Fitch

Small Business Division Intuit

[Todd\\_Fitch@intuit.com](mailto:Todd_Fitch@intuit.com)

Copyright: STeP-IN Forum and Quality Solutions for Information Technology Pvt. Ltd.

Published with permission for restricted use in STeP-IN SUMMIT 2008 in agreement with full copyrights from owner(s) / author(s) of material. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior consent of the owner(s) / author(s). This edition is manufactured in India and is authorized for distribution only during STeP-IN SUMMIT 2008 as per the applicable conditions.

**Practices Experience Knowledge Automation**

# Centralized vs. Decentralized Test Automation

Todd Fitch  
Quality Leader, Small Business Division  
Intuit

## About Intuit...



LACERTE

## Test Automation Success Factors

---

- ▶ Right tools
- ▶ Right infrastructure
- ▶ Right people
- ▶ Right tests
- ▶ Good development process
- ▶ Management buy-in & understanding

▶ This talk is not about these factors

## The Forgotten Factor

---

- ▶ Organizational structure of the people and the work

Centralized or Decentralized

▶ The theme of this talk

## Centralized

---

- ▶ All aspects handled by a central team
    - ▶ Development & maintenance
    - ▶ Execution
    - ▶ Triage
  - ▶ Engineers with technical degrees
  - ▶ Usually not domain or subject matter experts
  - ▶ Others provide test cases to automate
  - ▶ Mindset is that of a service organization
- 
- ▶

## Pros & Cons

---

### Pros

- ▶ Automation experts
- ▶ Feature or Product Prioritization
- ▶ Easy to measure costs
- ▶ Easy coordination

### Cons

- ▶ Extra effort for test cases
  - ▶ Tests may not be correct
  - ▶ Team is a bottleneck
  - ▶ Execution triage effort grows
- 
- ▶

## Decentralized

---

- ▶ **Tasks distributed across QA team**
    - ▶ Development & maintenance
    - ▶ Execution
    - ▶ Triage
  - ▶ Varying levels of software development experience
  - ▶ Domain and subject matter experts
- 
- ▶

## Pros & Cons

---

### Pros

- ▶ Test case prioritization
- ▶ Faster failure triage
- ▶ Teams responsible for all testing
- ▶ More flexible team

### Cons

- ▶ Difficult to avoid overlap
  - ▶ Not development or automation experts
  - ▶ Costs difficult to track
  - ▶ Automation not always completed
- 
- ▶

## Example 1

---

- ▶ Centralized tools & automation team
  - ▶ Significant test automation developed
  - ▶ Central team could not keep pace
  - ▶ Transition to decentralized team failed
    - ▶ Untrained QA team
    - ▶ Developers did not have time or desire
- 
- ▶

## Example 1 – Lessons Learned

---

- ▶ Create a roadmap and transition plan
  - ▶ Educate management on the roadmap
  - ▶ Train QA on automation as part of the plan
  - ▶ Get buy-in from development teams
- 
- ▶

## Example 2

---

- ▶ Started out decentralized
  - ▶ Lack of time to develop automation
  - ▶ No traction or momentum
  - ▶ No significant automation developed
- 
- ▶

## Example 2 – Lessons Learned

---

- ▶ Use a centralized team on a pilot project
  - ▶ Get management commitment to automation
  - ▶ Plan for transitions
- 
- ▶

## Example - Intuit

---

- ▶ Automation spread out among QA teams
  - ▶ Lack of coordination between teams
  - ▶ Varying levels of automation
  - ▶ Varying levels of test robustness
- 
- ▶

## Intuit – Lessons Learned

---

- ▶ Without proper coordination, chaos results
  - ▶ Need for proper standards
  - ▶ Need to treat automation as software
  - ▶ Re-centralization can be effective
- 
- ▶

## Current Status

---

- ▶ Successfully transitioned from centralized to decentralized
  - ▶ Revisiting QuickBooks automated regression
    - ▶ Central team focused on rework
    - ▶ QA teams focused on new features
  - ▶ New product teams starting out decentralized
    - ▶ Most QA engineers trained on automation
    - ▶ Management understands tradeoffs and investment
- 
- ▶

## Challenges

---

- ▶ Test automation for new platforms (e.g. mobile)
  - ▶ Difficulty finding software engineers who want to work in QA
  - ▶ Moving automation into development teams
  - ▶ Proliferation of web technologies and lack of tools
  - ▶ Too many tools – which is best?
- 
- ▶

## Framework for Analysis - I

---

- ▶ **Have automation efforts failed before?**
- ▶ **Is there a need to convince people of the value of automation?**
  - ▶ If yes, use a centralized team on a pilot project
- ▶ **Level of management buy-in (short vs. long)**
  - ▶ If short-term, use a centralized team on a pilot project
  - ▶ If long-term, look at the other factors
- ▶ **Are you already behind in automation efforts?**
  - ▶ If yes, use a centralized team to catch up and decentralized team for new work



## Framework for Analysis - II

---

- ▶ **Is technology leading edge (tools may not be there yet)?**
  - ▶ If yes, may need to use a centralized team for a proof-of-concept
- ▶ **Skill level of QA team**
  - ▶ If your QA team consists of trained developers, use a decentralized model
  - ▶ If not, you may have to start with centralized
- ▶ **Availability of software engineers to work in QA**
  - ▶ If small pool, may have to use centralized



## Framework for Analysis - III

---

- ▶ Level of product expertise required
  - ▶ If high, use centralized and have QA write detailed scripts
- ▶ Costs of tool licenses and your budget
  - ▶ if small budget and expensive tool, may have to use centralized

Finally, hybrid models are possible  
No matter what you do, have a clear roadmap and  
communicate it

---



## Q&A

---

Thank you for your time!

---



## Speaker Bio

---

- ▶ Bachelor of Science, Computer Science – San Jose State University
- ▶ MBA – University of California, Berkeley
- ▶ MBA – Columbia University
- ▶ Quality Leader in the Small Business Division of Intuit, Inc.
- ▶ 20 years software industry experience, 5 at Intuit
- ▶ Experience in development and QA roles

[www.toddfitch.com](http://www.toddfitch.com)

---

