T15

Thursday, May 18, 2006 3:00PM

ACCEPTANCE TESTING: WHAT IT IS AND HOW TO DO IT BETTER - IN CONTEXT

Michael Bolton
DevelopSense

Michael Bolton

Michael is a tester, testing trainer, consultant, and writer now living in Toronto after six years in Los Angeles. He spent eight years with Quarterdeck Corporation, née Quarterdeck Office Systems, four years in Toronto and four at the company's head offices in Marina del Rey, California. For the last five years, he has been providing training and consulting services in testing and quality to organizations in Canada, the United States, and around the world.

User Acceptance Testing

Michael Bolton

DevelopSense

Toronto, Ontario, Canada

mb@developense.com

http://www.developsense.com

+1 (416) 656-5160

Acknowledgements

- For this talk in particular, I'm deeply indebted to James Bach
- For all the talks that I do, I'm indebted to
  - James Bach
  - Cem Kaner
  - Jerry Weinberg
  - George Carlin
  - Richard Feynman

Question

What *is*
User Acceptance Testing
to *you*?

What Is UAT?

- the last stage of testing
- compliance with requirements based on specific examples
- tests run for a customer, to demonstrate functionality
- tests run *by* a customer to demonstrate functionality
- not tests but a slam-dunk demo
- beta testing
- tests that must pass for the user to be happy

- prescribed tests that absolutely must pass as a stipulation in a contract
- tests not done by a developer
- tests done by real users
- tests done by proxies for real users
- Fitnesse-based tests; examples of intended functionality
- tests that mark a code-complete milestone

The Seven Principles of the Context-Driven School

- The value of any practice depends on its context.
- There are good practices in context, but there are no best practices.
- People, working together, are the most important part of any project's context.
- Projects unfold over time in ways that are often not predictable.
- The product is a solution. If the problem isn't solved, the product doesn't work.
- Good software testing is a challenging intellectual process.
- Only through judgment and skill, exercised cooperatively throughout the entire project, are we able to do the right things at the right times to effectively test our products.

This is a talk about

User Acceptance Testing

This is a talk about

Context-Driven Thinking

Question

Who might be interested in User Acceptance Test results?

Who Is Involved in the Project?

- Contracting authority
- Monetary authority
- Legal or regulatory authority
- Development manager
- Test manager
- Test lead
- Testers

- Developers
- Documenters
- The end-user's line manager
- The end-user
- The end-user's customers
- The developers
- The testers

Who Is Involved in UAT?

- Who are the people producing the item being tested?
- Who are the people accepting it?
- Who are the people who have mandated the testing?
- Who is doing the testing?

What Is Testing?

- Testing is a technical investigation of a product, done to expose quality-related information.

  – Cem Kaner, "The Ongoing Revolution in Software Testing", 2005

- Questioning the product in order to evaluate it.

  – James Bach, "Rapid Software Testing", 2005

Question

What is the purpose of testing?

What is the Purpose of Testing?

- Many say that the purpose of testing is to find bugs.
- Kaner (2004) lists

- finding defects
- maximizing bug count
- blocking premature product releases
- helping with ship/no-ship decisions
- minimizing support cost

- assessing conformance to specs
- conformance to regulations
- minimizing lawsuit risk
- finding safe scenarios
- assessing quality
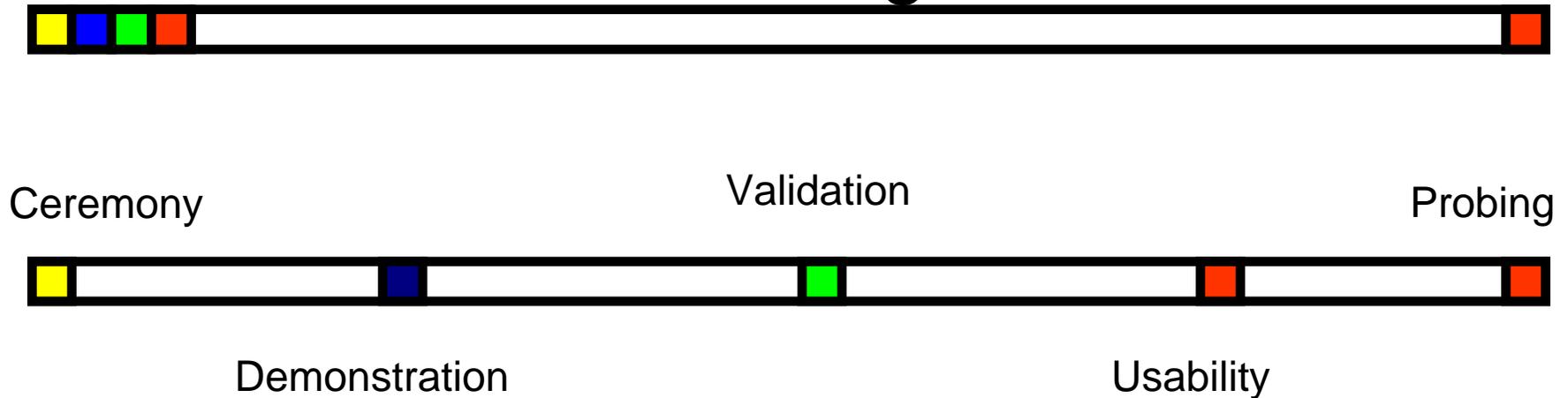- verifying correctness

Which things *could* apply to UAT?

What Is Acceptance?

- It's whatever the acceptor says it is; it's whatever the key is to open the gate—however secure or ramshackle the lock.

- Acceptance *testing* is any testing done by one party for the purpose of accepting another party's work.

  - Thanks to James Bach

Some Motivations for User Acceptance Testing

Ceremony   Validation   Probing

Demonstration   Usability

- The following slides provide some paradigmatic examples

- They're intended to be controversial to some

- If you accept the example, can you imagine others?

- If you reject the example, is it because that's not your context?

UAT As Ceremony

- What's the goal?
  - A rite of passage, a handoff, a ritual
- Who does the testing?
  - ideally, no one
- What's the emotional climate?
  - happiness and hopefulness
- What's the technical approach?
  - ideally, none

UAT As Demonstration

- **What's the goal?**
  - A presentation to customers
- **Who does the testing?**
  - customer or producer representative
- **What's the emotional climate?**
  - pride, with nervousness
- **What's the technical approach?**
  - active avoidance of bugs

UAT As Mild Exercise

- **What's the goal?**
  - reassurance
- **Who does the testing?**
  - generally customers, but not skilled testers
- **What's the emotional climate?**
  - cheerful uncertainty
- **What's the technical approach?**
  - almost entirely confirmatory

UAT As Validation

- **What's the goal?**
  - reassurance
- **Who does the testing?**
  - testers, but not investigators
- **What's the emotional climate?**
  - determination to ship
- **What's the technical approach?**
  - highly confirmatory tests

UAT as Assigning Blame

- **What's the goal?**
  - assignment of blame for a project gone bad
- **Who does the testing?**
  - a skilled tester acting for the customer
- **What's the emotional climate?**
  - fastidious, prickly, confrontational, or hostile
- **What's the technical approach?**
  - aggressive search for the killer bug

UAT on Behalf of Software

- **What's the goal?**
  - ensuring the success of inter-process communication
  - defense against incompatibility
- **Who does the testing?**
  - well-trained testers with programming and application modelling skills
- **What's the emotional climate?**
  - ideally, neutral professionalism
- **What's the technical approach?**
  - ideally, a balance of aggressive test ideas, typically (though not always) implemented through automation

UAT as Beta Testing

- ## What's the goal?
  - maybe bug-finding, maybe marketing

- ## Who does the testing?
  - large numbers of unmotivated, unskilled testers, with a handful of committed people

- ## What's the emotional climate?
  - enthusiasm, flattery, and edginess from the vendor

- ## What's the technical approach?
  - sometimes expert; mostly haphazard

UAT as Examples in XP/Agile

- ## What's the goal?
  - far less focus on testing; much more on design-related information and prototyping
- ## Who does the testing?
  - testers, or
  - developers or customers who can bridge the developer/business gap
- ## What's the emotional climate?
  - generally positive and collaborative
- ## What's the technical approach?
  - supplying confirmatory tests, often in an automation-assisted framework

UAT as Milestones in XP/Agile

- ## What's the goal?
  - decision on when to finish an iteration
- ## Who does the testing?
  - testers using Fit/Fitnesse, WATIR, etc.
- ## What's the emotional climate?
  - team-focused; perhaps rote or tedious for skilled testers who are more focused on investigation
- ## What's the technical approach?
  - supplying confirmatory tests, typically in an automation-assisted framework

Acceptance Tests in XP

- "When all the acceptance tests pass for a given user story, that story is considered complete."

- What might this miss?

  – User stories can easily be atomic, not elaborate, not end-to-end, not thorough, not *risk-oriented*, not *challenging*

  – All forms of specification are to some degree

    - Incomplete; or
    - Unreadable; or
    - Both

It Works!

- "When a developer says 'it works', he really means 'it appears to fulfill some requirement to some degree.'" (One or more successes)

  - James Bach
    - Rapid Software Testing, 2000-2005

It Works!

- "When you hear someone say, 'It works,' immediately translate that into, 'We haven't tried very hard to make it fail, and we haven't been running it very long or under very diverse conditions, but so far we haven't seen any failures, though we haven't been looking too closely, either.' (Zero or more successes)

  – Jerry Weinberg
    - The SHAPE Forum, www.geraldmweinberg.com

UAT as Probing Tests

- ## What's the goal?
  - thoroughly-tested, high-quality software

- ## Who does the testing?
  - ideally, expert testers with critical- and systems-thinking skills

- ## What's the emotional climate?
  - dispassionate investigation; critical *and* supportive

- ## What's the technical approach?
  - challenging the software; seeking to break it, and by failing to do so, confirming that it works

Probing Example: End-to-End Test

- Exercise entire transactions, system-wide from cradle to grave

- Exercise *multiple* entire transactions, without resetting the system between each

- Investigate interrelationships between
  - application under test and other applications
  - AUT and multiple platforms
  - AUT and time

Which Model of UAT is Right?

- Each one is right for its context
- It's crucial to understand the mission in the current context
  - the prevailing definition
  - motivations
  - deliverables
- Make your approach, practices, strategies, and techniques congruent with the mission

References

- Kaner's papers: www.kaner.com
- Bach's papers: www.satisfice.com
- The Shape Forum: www.geraldmweinberg.com/shape.html
- Lessons Learned in Software Testing (Kaner, Bach, and Pettichord)
- Black Box Software Testing and Software Testing Techniques (Beizer)
- Top Ten Challenges of Software Testing (Perry and Rice)
- *Any* and *all* books by Jerry Weinberg
- My own Web site at www.developsense.com

Questions and Comments?

- Here and now
- Later, here at the conference
- By email: mb@developsense.com
- By phone: +1 (416) 656-5160
- The Software-Testing mailing list
  – register at groups.yahoo.com
- The SHAPE Forum