



Google

## Panel Discussion

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# Automated Testing in Japan

- Japanese engineers and testers want:
  - Automated testing
  - Testing as part of the development process
  - Developers to contribute to authoring and maintaining tests
- But some Japanese companies and executives do not see the value:
  - QA engineers earn lower wages and can write the tests
  - Believe that developer productivity will suffer if they write tests
- What is the value of test automation to the bottom line:
  - Increased release frequency
  - Decreased time to identify bug insertion
  - Improved consistency

# Testing Culture @ Google



- ~11 Years of testing culture promoting hand-curated automated testing
  - [Testing on the toilet](#) and Google testing [blog](#) started in 2007
  - [GTAC](#) conference since 2006 to share best practices across the industry
  - First internal awards for unit testing were in 2003!
  - Part of our new hire orientation program
- [SETI](#) role
  - Usually 1-2 SETI engineers / 8-10 person team
  - Develop test infrastructure to enable testing
- Engineers are expected to write automated tests for their submissions
- Limited experimentation with model-based / automated testing
  - Fuzzing, UI walkthroughs, Mutation testing, etc.
  - Not a large fraction of overall testing



# Automated Testing Culture at Google

- Case study: Youtube acquisition
  - Before: Youtube had little automated testing.
  - After: They adopted Google testing culture and by 2010 they fully automated.
  - Improved release frequency and developer velocity!
- Increasing release frequency requires automation:
  - Some teams promise that checked in changes are live on the web in 36 hours!
  - Others have hourly releases to a QA environment.
- Engineers need value arguments to “sell” automation to executives
  - Hard to quantify “Engineering productivity” well enough.
  - The real impact on total costs / feature / loc is hard to quantify.
  - The main argument may be related to increased release frequency.