The Elusive Tester to Developer Ratio

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Roadmap

- Background
- Problems with benchmarking
- Research findings
- What these findings may be telling us
- Helpful ways to apply this metric
- Next steps

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Background

- The “tester to developer” ratio has been a commonly sought metric for many years.
- Many people are interested in knowing “industry averages” or “industry norms” for this metric so they can plan their own staffing levels.

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Background

- I have been researching this metric since 1998 and have found that while it appears like a useful estimating metric, the reality is that this ratio is only part of the test effort picture.

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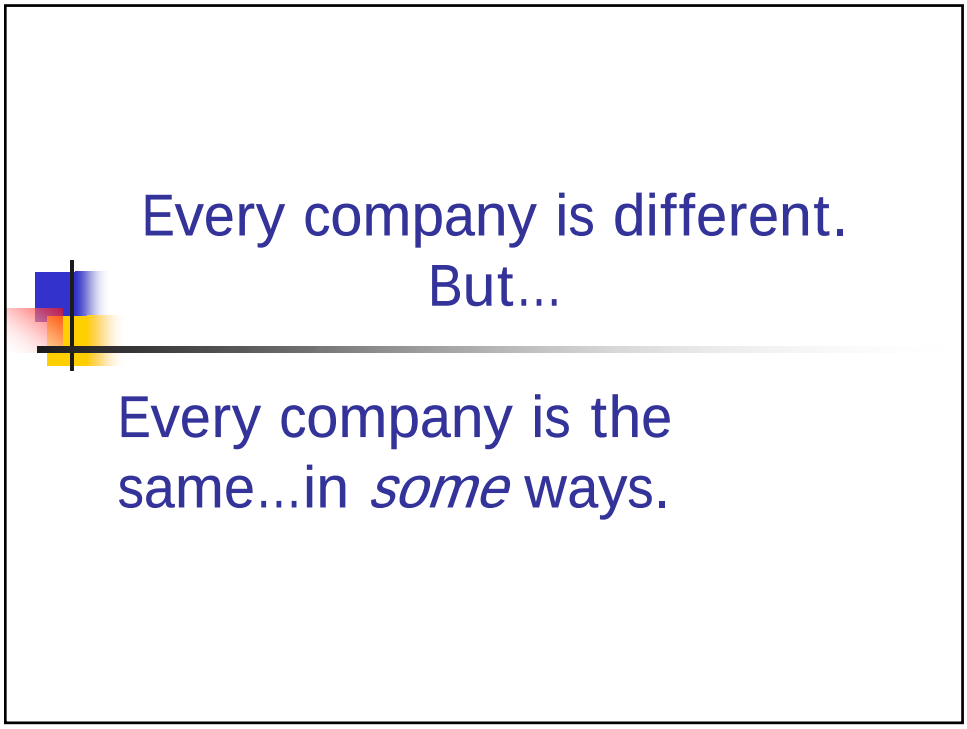
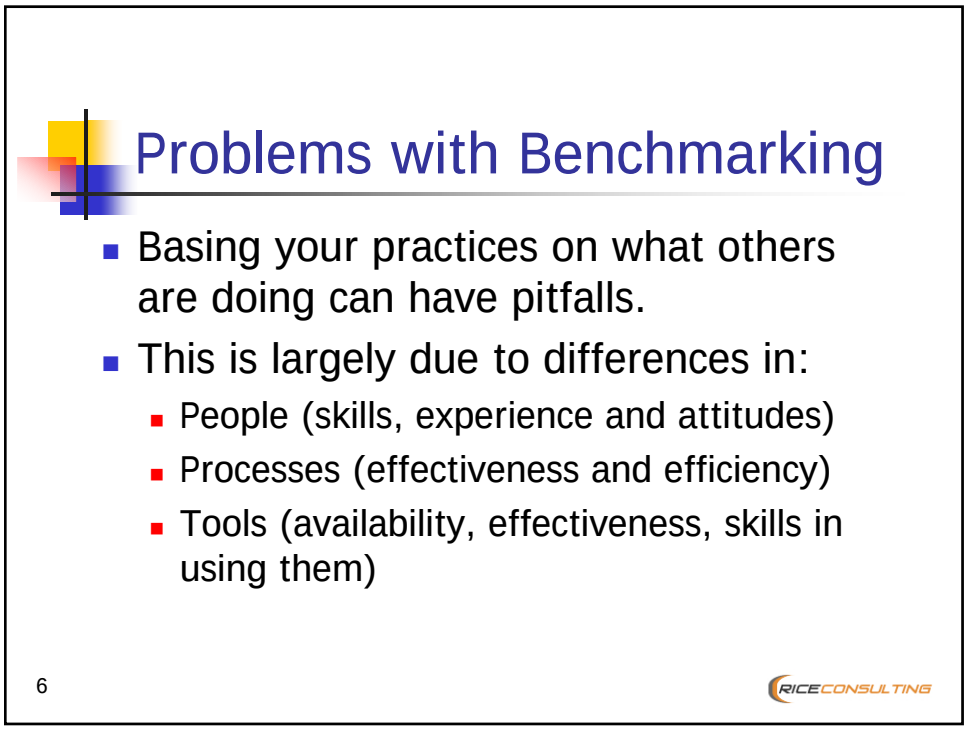

Every company is different.
But...
Every company is the same...in *some* ways.


Problems with Benchmarking
Basing your practices on what others are doing can have pitfalls.
This is largely due to differences in:
People (skills, experience and attitudes)
Processes (effectiveness and efficiency)
Tools (availability, effectiveness, skills in using them)
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Example

- Just because company XYZ has good results with a tester to developer ratio of 1 to 1 doesn't mean that should be your ratio.
  - Perhaps your company could do just as well with a 1 to 3, 1 to 5, or 1 to 10 ratio.

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Research Findings

- I conducted a new survey of software test organizations worldwide starting in August of 2009. As of today:
  - 72 respondents
    - 6 from Europe
    - 1 from Asia
    - The rest from the U.S. and Canada
  - A wide variety of industries represented

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Survey Questions

- How many developers are in your organization?
- How many testers are in your organization?
- On a scale of 1 to 6, where 1 is poor and 6 is super, how would you rate the effectiveness of your current ratio?
- Do you have any anecdotal information about how your current ratio effectiveness?

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Survey Results

- The leanest ratio was one tester to twenty-one developers (effectiveness rating of “five”),
- The richest ratio was eighteen testers to fifteen developers (effectiveness rating of “four”).
- There were one anomalous responses
  - Zero testers to four developers (The effectiveness rating on that one was “three”).
  - One tester to zero developers (effectiveness of “six”)

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Survey Results (2)

- The average ratio was one tester to 4.81 developers.
- The most common response was one tester to three developers (eight responses),
- The next most common was one tester to five developers (seven responses).
- There were thirty-five responses (49%) of tester to developer ratios of 1:3 or lower.

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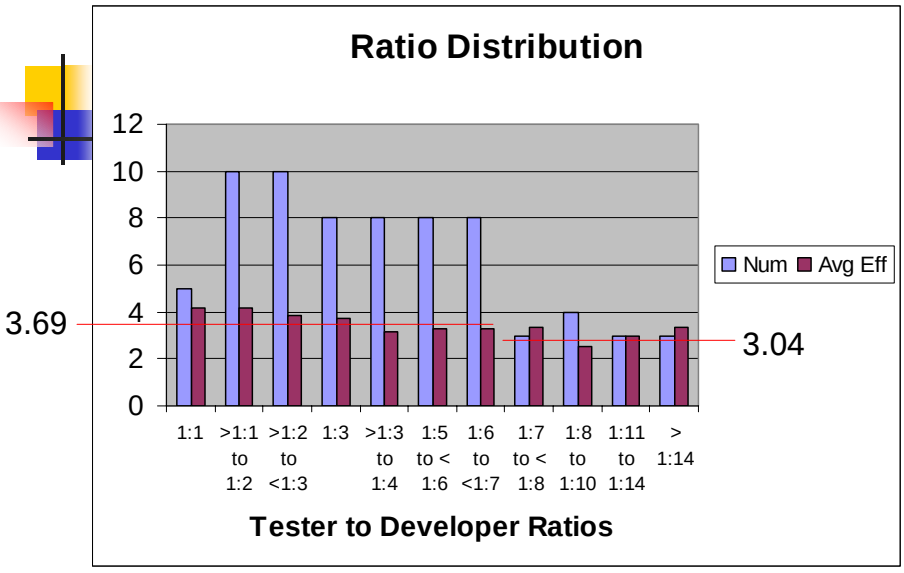

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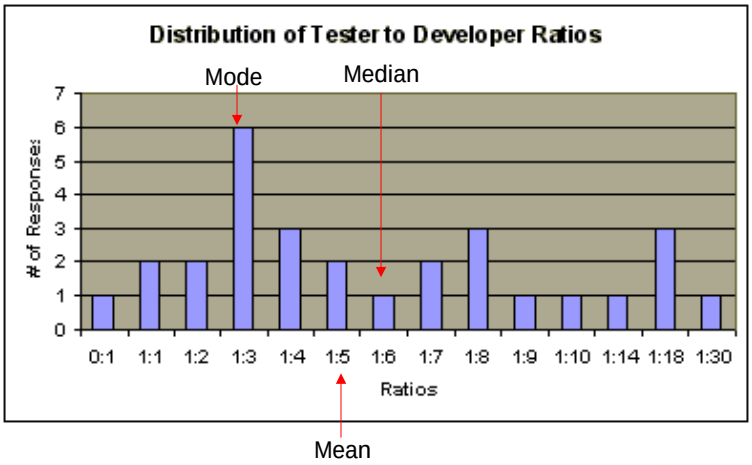
How Does This Compare to Earlier Findings? (2000)



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Some Observations

- The responses varied greatly.
  - For those looking for an “industry norm” of developer to tester ratios, this may show that the range of workable ratios is wide.
  - Effective testing can be achieved by better practices, tools and leveraging developer-based testing.

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Observations (2)

- Almost half of the responses were at the "richer" ratios.
  - The average effectiveness reported by this group was 3.69 – slightly above average.
  - Interestingly, the average effectiveness for the higher ratios was 3.04 – average, and not a huge difference from the lower ratio group.

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Observations (3)

- In the higher ratio group, there were some with higher than average test effectiveness of four or five.
  - This tells me that you have a higher ratio and still be effective at software testing.
  - Put another way, the achievement of good testing is probably not solely in the ratio of developers to testers.

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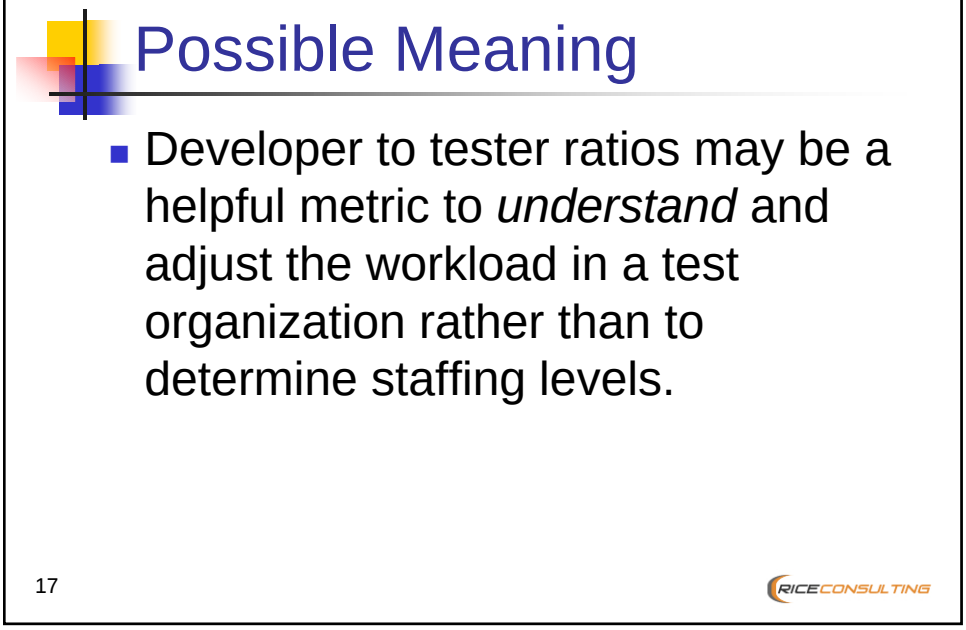
Possible Meaning
Developer to tester ratios may be a helpful metric to *understand* and adjust the workload in a test organization rather than to determine staffing levels.
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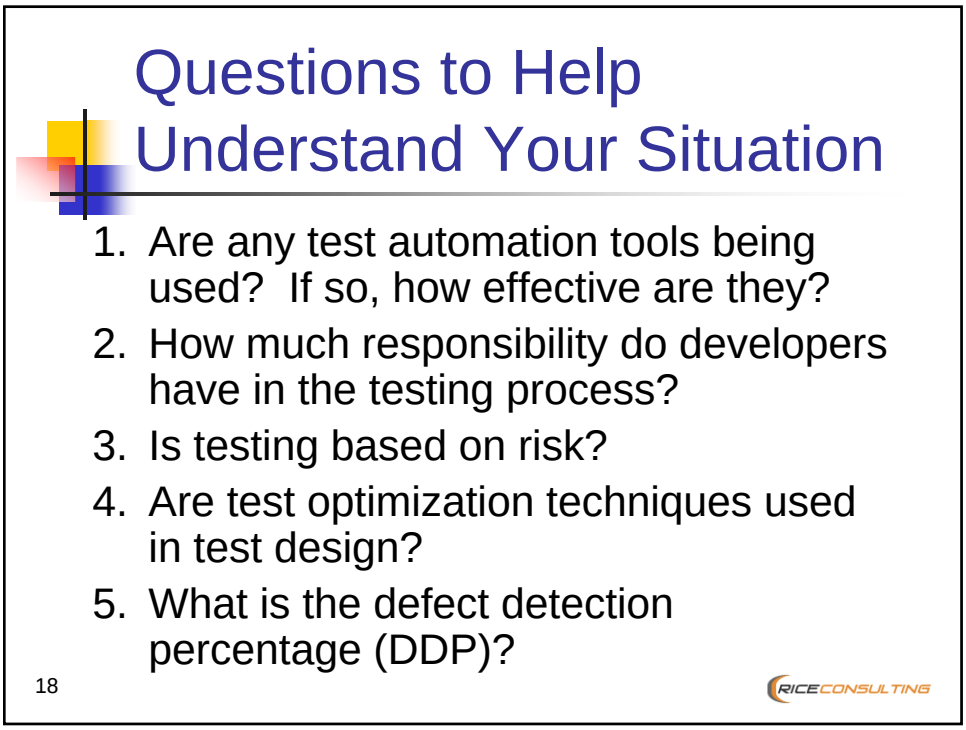
Questions to Help Understand Your Situation
1. Are any test automation tools being used? If so, how effective are they?
2. How much responsibility do developers have in the testing process?
3. Is testing based on risk?
4. Are test optimization techniques used in test design?
5. What is the defect detection percentage (DDP)?
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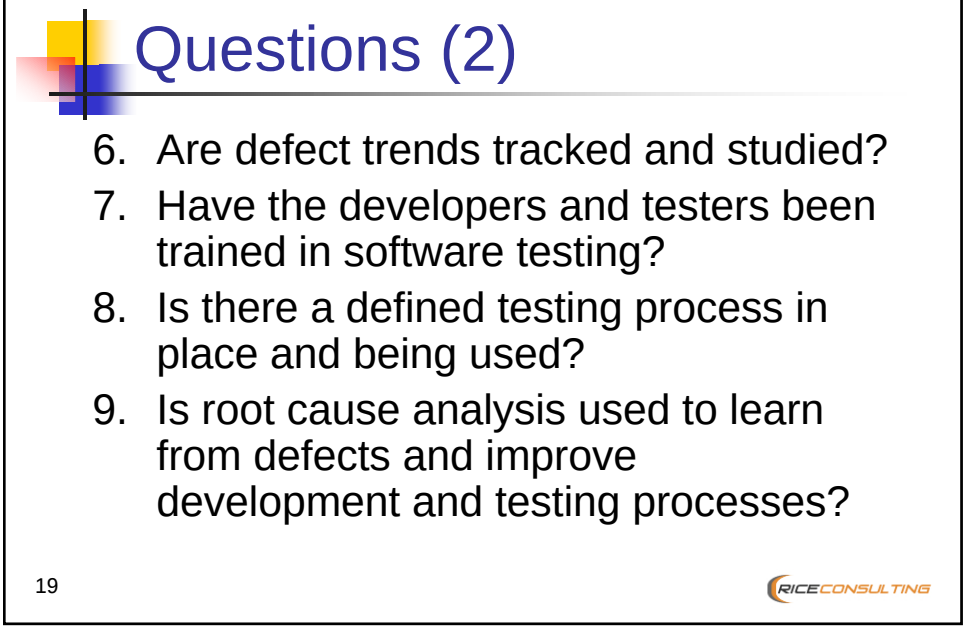
Questions (2)
6. Are defect trends tracked and studied?
7. Have the developers and testers been trained in software testing?
8. Is there a defined testing process in place and being used?
9. Is root cause analysis used to learn from defects and improve development and testing processes?
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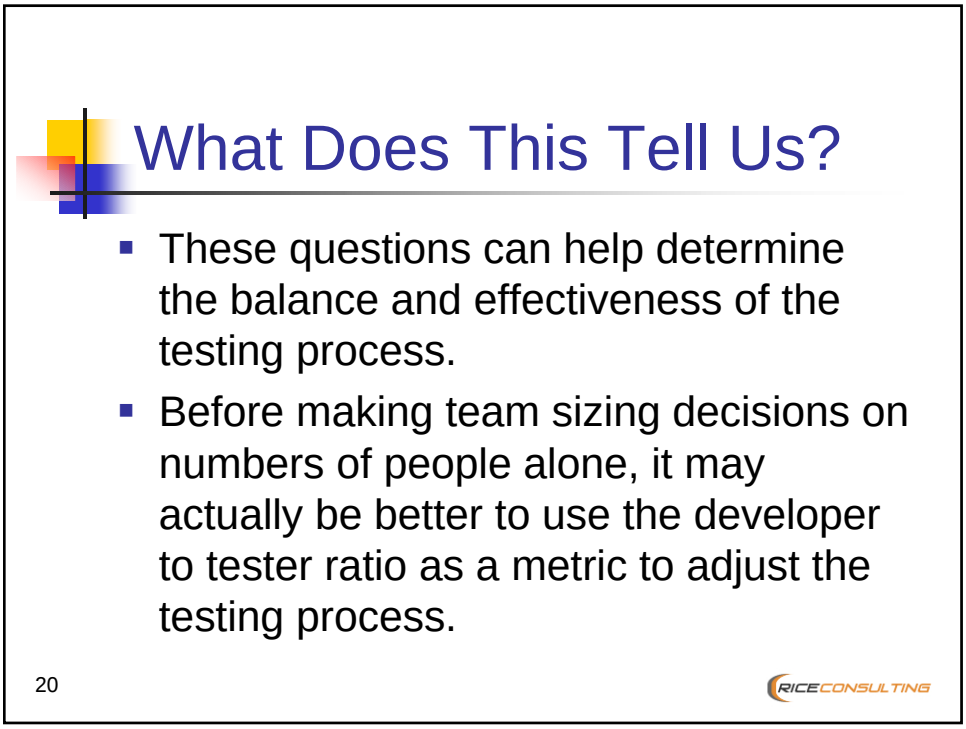
What Does This Tell Us?
These questions can help determine the balance and effectiveness of the testing process.
Before making team sizing decisions on numbers of people alone, it may actually be better to use the developer to tester ratio as a metric to adjust the testing process.
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What if You are in a High Ratio Situation?

- Leverage unit testing by developers
- Work on implementing an effective testing process
- Practice risk-based testing
- Automate where it makes sense
- Build a robust and repeatable test data for regression testing
- Optimize tests

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Next Steps

- I plan to continue this research.
  - Please contribute your input and experiences to me at rrice@riceconsulting.com
  - All data is held in strict confidence.

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Summary

- The developer to tester ratio varies widely from company to company.
- Industry “average” may not even be a good benchmark.
- This metric may be a better guide to improving your testing process than it is for staffing your team.
- You can perform good testing even in high ratio situations with the right balance of people, tools and processes.

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Reference

- Article – The Elusive Tester to Developer Ratio
  - http://riceconsulting.com/home/index.php/Testing-Metrics/the-elusive-tester-to-developer-ratio.html

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Bio - Randall W. Rice

- Over 30 years experience in building and testing information systems in a variety of industries and technical environments
- Certified Software Quality Analyst
- Certified Software Tester
- ASTQB Certified Tester – Foundation level, Advanced Level
- Treasurer of the American Software Testing Qualification Board (ASTQB)
- Chairperson, 1995 - 2000 QAI's annual software testing conference
- Co-author with William E.Perry, *Surviving the Top Ten Challenges of Software Testing*
- Principal Consultant and Trainer, Rice Consulting Services, Inc.

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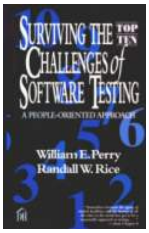

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