

## Value-added Feedback - The Missing Link in Software Testing



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## Becoming an Information Provider

- Traditionally, testers have been “problem finders”.
- The more positive and value-added view is to be an information provider.



## What's In This For You?

- An affordable and easy way to:
  - Build your credibility
  - Promote a positive view of testing
  - Help guide your testing projects
  - Be helpful to project management
  - Add value to projects
  - Start improving processes and methods
  - Be seen as more than a commodity



## Four Ways You Can Add Value

- Ending the cycle of defects
- Showing information with dashboards
- Being the keeper of information
- Learning from failure



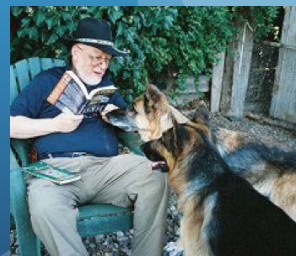
## Development and Testing Methodologies

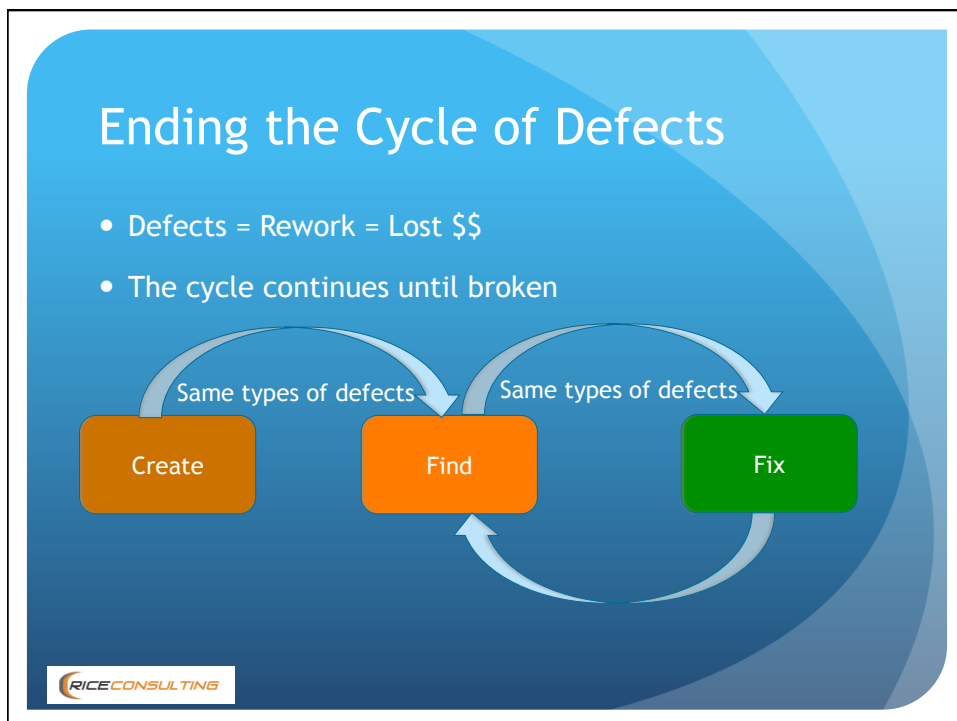
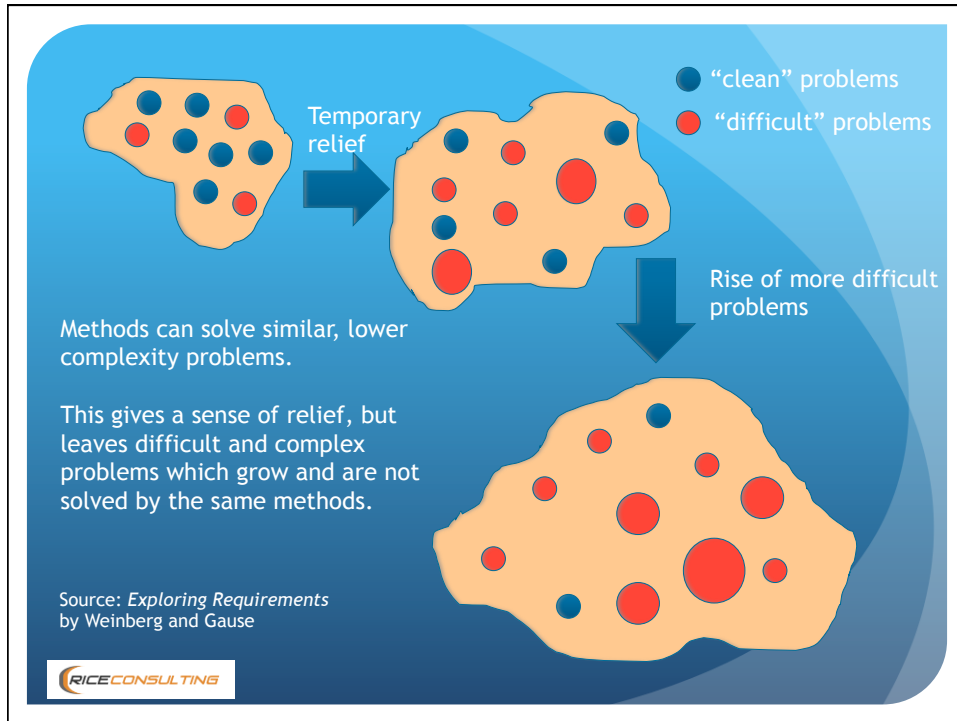
- Are typically *not* the main solution to build better software!
  - The magic is not in the methods!
  - If so, why do we keep trying different “silver bullets”?
- There is a relationship, just not the deeper solution.
- This is actually good news, because you can apply these ideas regardless of your methods.

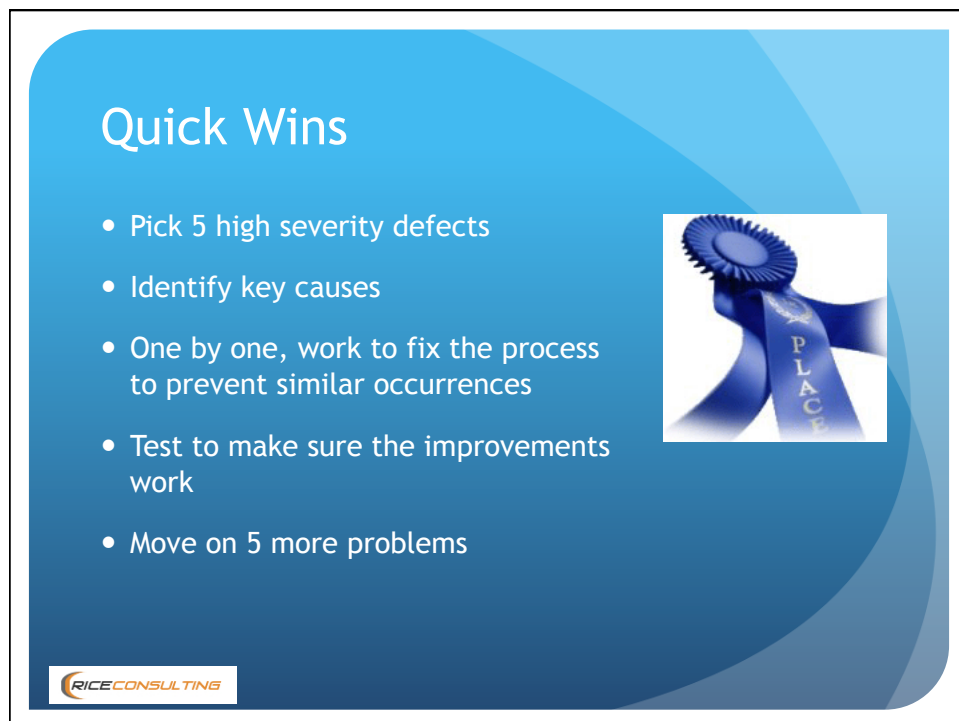
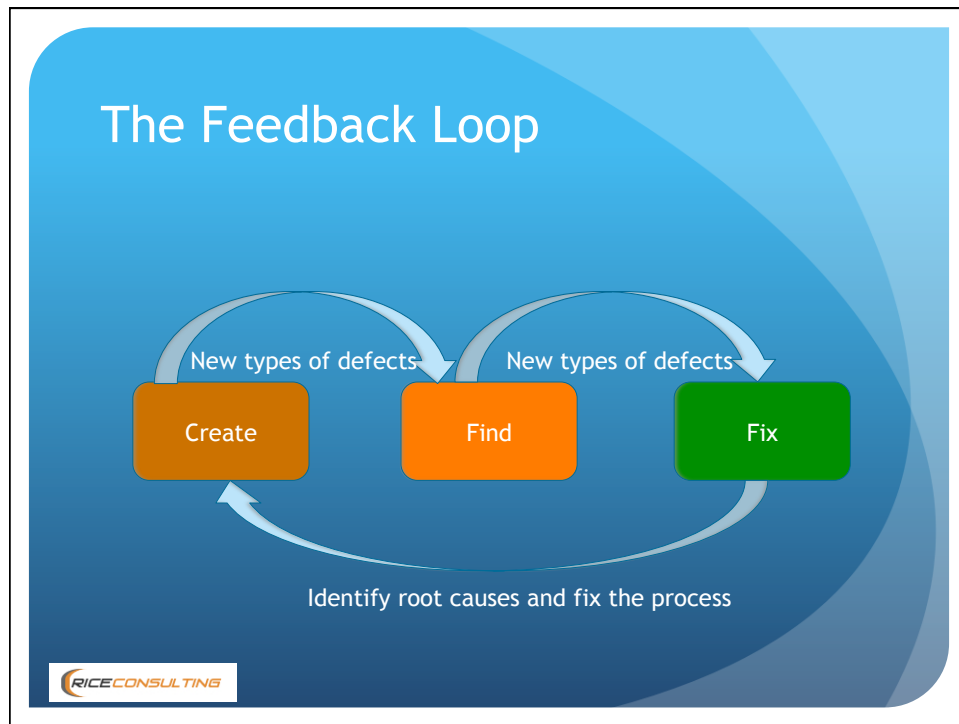


***“If people don’t know what they want, no development process - no matter how exact, how clever, or how efficient - will satisfy them.”***

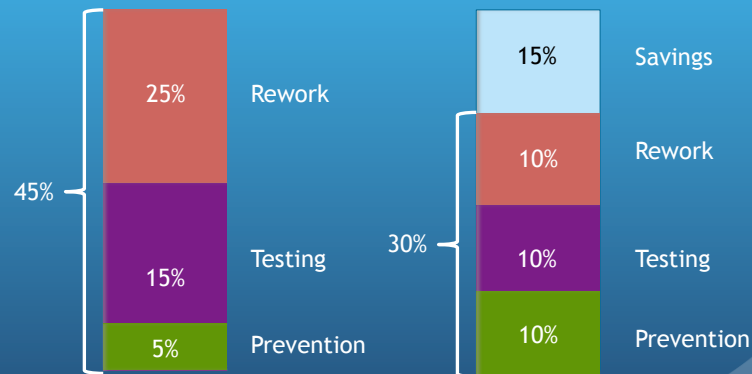
***Gerald Weinberg***







## The Payoff - How to Find an Extra 15% in Your Development Budget



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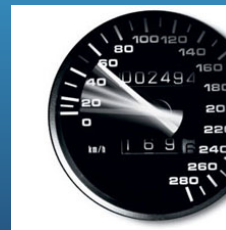
## What's Needed?

- Measurements and metrics
  - Where defects originate
  - Which types of defects are most prevalent
  - Why defects occur
  - Degree of improvement
- A meaningful way to show metrics
- A culture of learning and improvement
- The will and support to take action

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## The Main Objective of Testing Dashboards

- To provide simple, meaningful and reliable information in one place to help guide the testing effort and convey that information to our clients.



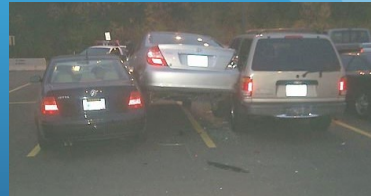
## A Project is Like Taking a Trip

- You need to know your:
  - Destination
  - Current location
  - Orientation (Direction)
  - Trip progress
  - Speed
  - Resource levels (gas, oil, etc.)
  - Engine operation (temp, charge, etc.)



## The Goals

- Arrive at the desired destination safely
- Stay on the road
- Make good progress
- Don't get lost
- Don't run out of fuel
- Only one driver at a time



## Key Components

- An effective testing strategy
  - Defines the test objectives, scope and approach early in the project.
- A workable test plan
  - Defines scope, resources, schedules, risks, contingencies, etc.
- A dashboard
  - Monitors defect levels, test progress, resource levels.





## Dashboards

- Dashboards are not new
  - They have been a common topic in articles and at conferences for several years.
- At the same time, testers often struggle with how to convey accurate and timely information to management.
- So...let's explore dashboards and look at some examples.
- Then, we'll look at the issues behind test measurement and reporting.



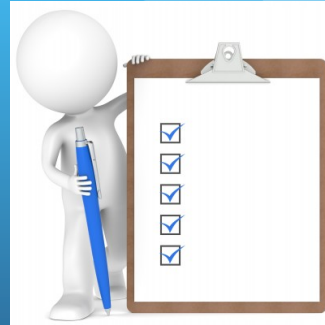
## Example: Your Car's Dashboard

- Car dashboards tell you current:
  - Trip progress (speedometer and odometer)
  - Resources (fuel)
  - Car status (temp, oil pressure, charging, engine performance)
  - Warnings (seat belt, open doors)



## What Makes a Good Metric?

- Simple
  - Can be easily measured and understood
- Can be automated
  - So we don't have to take readings manually
  - Also, people don't get the chance to manipulate the numbers
- Meaningful
  - We can gain useful information to make decisions



## Why Have a Testing Dashboard?

- For fast and easy reporting test results to management
- To have all of your testing information in one place
- To help guide the testing effort
- To help make good decisions
- To build project learning
  - Better estimates in the future
- To build the credibility and visibility of testing



## What is Required for a Dashboard?

- Accurate and meaningful measurements and metrics
  - Plus...a clear understanding of what the metrics mean.
- A culture of trust and openness
- Non-intrusive ways to measure
  - Ideally, the measures should come from activities already being tracked.
    - Defect tracking systems
    - Project management software



## What is Required for a Dashboard? (2)

- A way to display the information in ways that are:
  - Understandable
  - Easy to Build and Maintain
  - Accessible
  - Integrated with tools
    - Issue tracking
    - Test management
    - Project management



## What is Shown on a Typical Testing Dashboard?

- Test Coverage
  - Requirements
  - Functional
  - Test case
  - Code
- Test Status
  - Testing
  - Defect resolution
  - Readiness for deployment
  - Pass/Fail
- Progress
  - Based on test goals and objectives
  - Blockages
- Risk
  - Technical
  - Business
  - Project
- Defects
  - Categories
  - Trends
  - Detection Percentage
  - Resolution Status
- Testware
  - Completion %
  - Automation %
- Resources



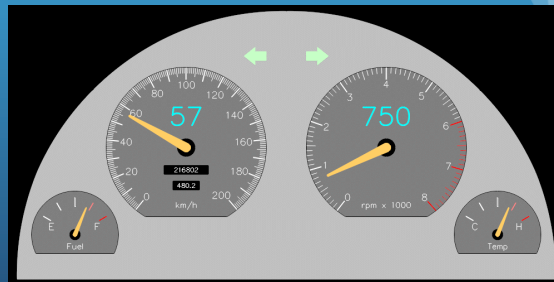
## What Should *You* Show?

- Ask your customers!
  - What information do they value?
  - How do they need it shown?
  - When do they need it?
  - How timely must it be?
- However, just like in obtaining user requirements, people often don't know what they want or need until they actually see it.
  - Start with a prototype

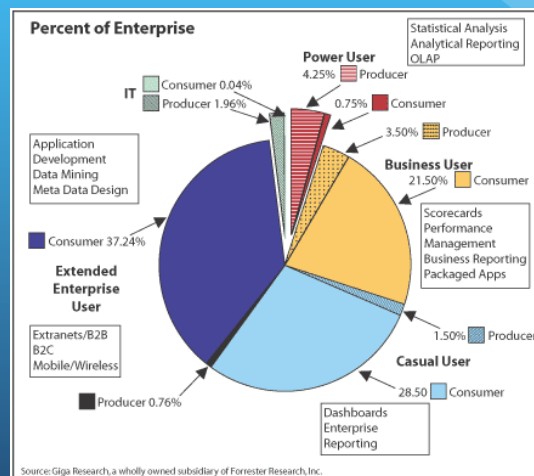


## Things to Consider When Designing Dashboard Items

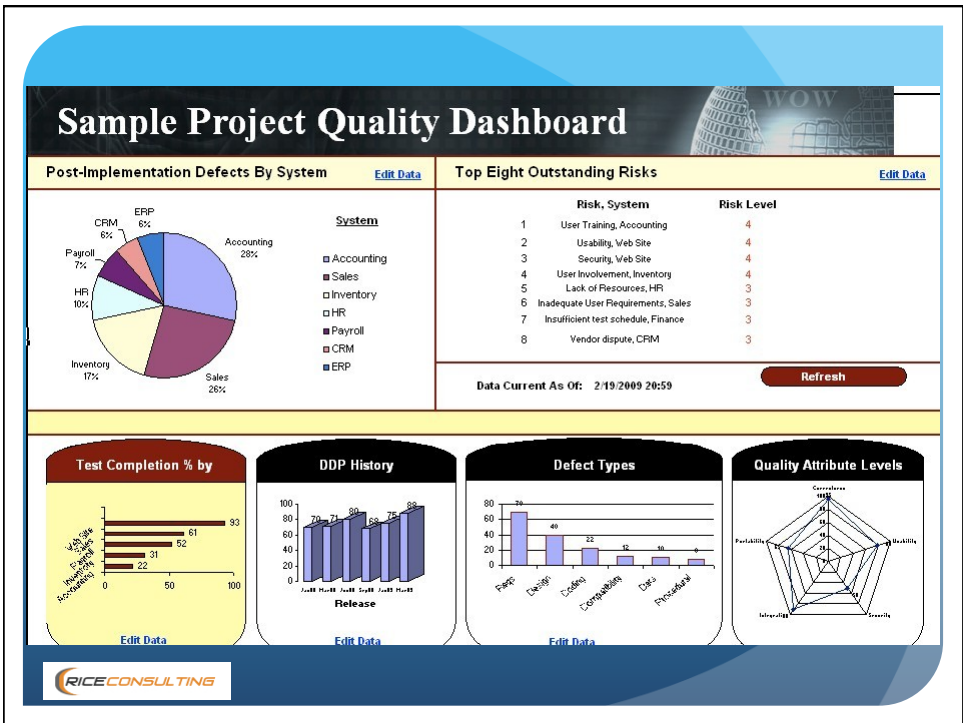
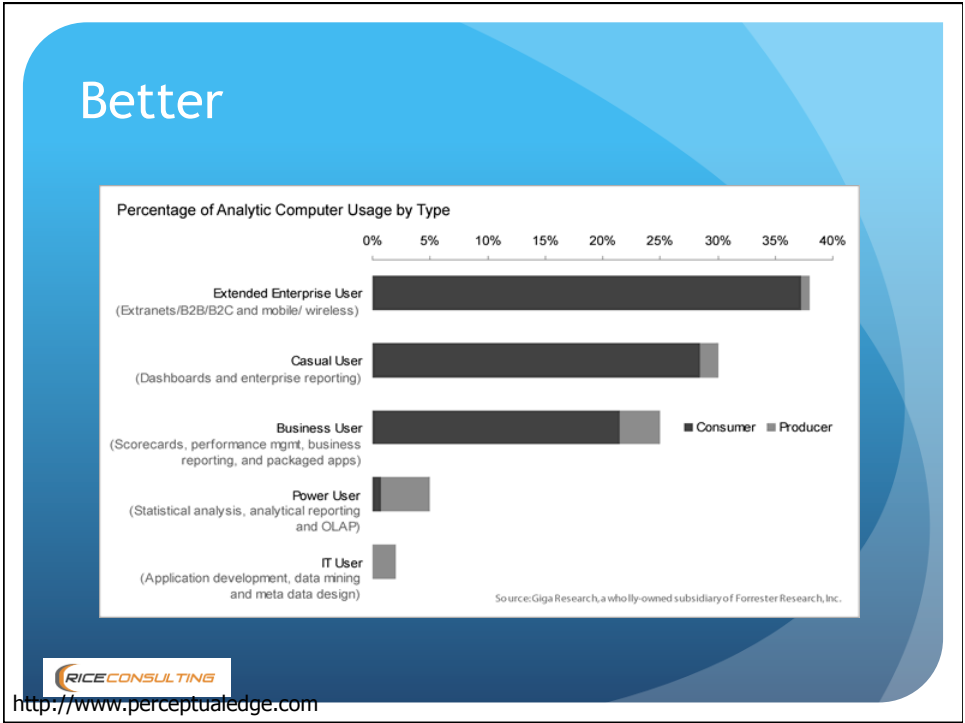
- Purpose of the Dashboard
- Chart or Graphic Types
- Colors
- Positions
- Brightness
- Orientation
- Sizes
- Shapes



## A “Not So Good” Example



<http://www.perceptualedge.com>



## What Would it Mean...

- To your project managers to have access to this type of information at any point in time?
- To the senior management in your company to see overall software quality information?
- To your career to be seen as the keeper of this kind of information?



## Words of Warning

- Too many items on a dashboard can be distracting and confusing.
  - Unless you are flying a plane!
- Metrics can be abused.
  - If people don't understand human behavior, more harm than good can result.
- Stuff happens.
  - Things not shown on your dashboard can derail your test.



## Words of Warning (2)

- With dashboards, everyone can see the same information at the same time.
  - This may be an issue if you don't want to show someone information until you have had a chance to see it first.
- Manual input to the dashboard gets overwhelming.
  - You want to automate the data capture as much as possible.
- Dashboards may be too general for some managers.



## Keeping the Process Working

- The dashboard tells you about vehicle (process) malfunctions.
  - In testing, the process is the engine.
    - The process might not be documented.
    - How you perform the process determines whether or not you reach the intended destination.





## Learning from Failure

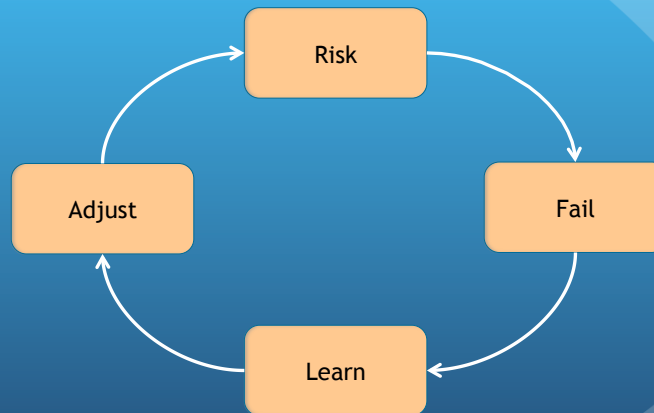
- The greatest value of a defect is to learn from it.
- This requires a culture of trust and openness.
- Methods include measurements, retrospectives and root cause analysis.



**In testing, failure is not an option - it's an objective!**



## Learning from Active Feedback and Failure



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## Process Improvement Without Making a Big Deal Out of It

- Most people who improve do so without a major model or push.
- All it takes is asking and acting on a few questions to your customers and team.



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## Questions for Customers

- Are we meeting your expectations?
  - How or why not?
- What else can we do to improve our service to you?
- Is there a particular team member that has been especially helpful to you?



## Questions for Team Members

- What do we do best?
- Which things are broken?
- Which things are declining?
- What can I do better as a leader to fix the problem?
- What can we address and improve in the short-term?
- What will take longer?
- Which additional resources will we need?



## Becoming an Agent for Change in Your Organization

- Starting Small – The “Skunkworks” Approach
- “Planned Organic”
- Celebrating and Rewarding Success
- Creating Your Action Plan
  - Identify Your Goals
  - Short-Term
  - Mid-Term
  - Long-Term



## Final Thoughts

- A key purpose of testing is to provide meaningful information to management to make informed decisions.
- This is a positive value-added view of testing.
- Dashboards are one more tool to help you guide your testing project, but they don't drive the car!



## Final Thoughts (2)

- Good dashboards have:
  - Good design
  - Current information
  - The right metrics for your situation
    - They should reflect the job at hand
    - They should be understandable
  - Meaning and value for the readers
  - Interpretation and guidance
    - Annotations are helpful



## Bio - Randall W. Rice

- Over 35 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 (Full)
- Director, 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 and Testing Dirty Systems*
- Principal Consultant and Trainer, Rice Consulting Services, Inc.



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