Testing Disasters and Turnarounds

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This Will Be a Different Kind of Session

- You may not remember the points on the slides, but you probably *will* remember the stories.
- So, this is a storytelling session, with lessons learned.
- You will also see how I assess readiness for improvement and present action plans for improvement.

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Disclaimers

- No names are given.
- There were a lot of dedicated people involved, trying to do the right thing.

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Remember…

- Not every story has a happy ending.
- No easy answers, but hopefully some insight and encouragement to apply to your own situation.
  - No cookbooks
  - Thinking and application are required

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Inspiration

- The inspiration for this session came from the television show, Gordon Ramsay's Kitchen Nightmares.
  - Dysfunctional and struggling dining establishments
  - Poorly managed
  - Menus that are unappealing, too complex, not appropriate for the area, and/or have little or no value to the customers
  - Few customers
  - Inadequate chefs

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The Tie-in

- Restaurants and IT shops have some things in common for survival:
  - They must show value to survive.
  - They must be well-managed.
  - They must understand their customers and provide what those customers value and desire.
  - They must be able to create and deliver a product that creates raving fans.

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Situation #1

- Credit Card Clearinghouse
  - Millions of credit card transactions processed daily
  - Seven year old “legacy” system
  - Highly integrated, “dirty system”
  - Only two original developers were still around, due to burnout and frustration
  - Confusion over the mission of IT
  - Changes performed nightly
  - Problems encountered daily
    - It required a team of 6 people full-time just fixing things at a cost of $250,000 per year.

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Situation #1 (Cont’d.)

- In addition
  - Customers unaware of problems
  - Very deadline-driven
  - There were no defined test standards or processes
  - Attempts at trying to estimate development, maintenance or testing tasks were unsuccessful
  - Only rudimentary tools were being used
  - No documentation
  - Requirements for development and maintenance were inadequate

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Situation #1 (Cont'd.)

- Testers and developers had never been trained in software testing
- No reviews of anything – code, change requests, tests...

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My Involvement

- I was engaged to conduct an assessment of software development, maintenance, and testing practices.
- There were many actionable items for improvement, and they all required senior management commitment and investment.

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Recommendations

- Simple and repeatable processes for:
  - Configuration management
  - Unit testing
  - Regression testing
  - Integration and system testing
- Tools for:
  - Regression testing
  - Defect tracking
- Design and implement a test environment

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Improvement Plan(1-3 Months)

- Task 1 -Define and communicate a common objective for software quality.
- Task 2 -Implement defined testing standards.
- Task 3 -Design testing processes.
- Task 4 -Design the test environment.

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Improvement Plan(1-3 Months)

- Task 5 - Integrate change management tools and processes.
- Task 6 - Define guidelines for project estimation, especially in the area of software testing.

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Improvement Plan (3-6 Months)

- Task 7 - Deploy test standards and processes.
- Task 8 - Start building the test environments.
- Task 9 - Integrate defect tracking tools and processes.

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Improvement Plan (6-12+ Months)

- Task 10 - Institute requirements reviews and technical reviews.
- Task 11 - Acquire training in software testing techniques.
- Task 12 - Select and acquire automated test tools to support the test process.
- Task 13 - Have a follow-up assessment performed.

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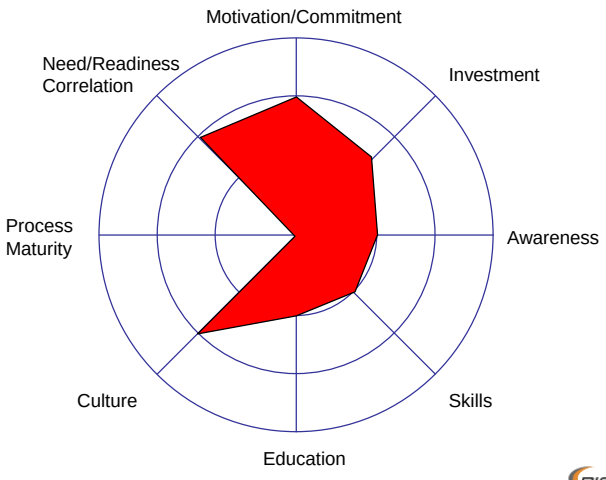
Readiness Assessment



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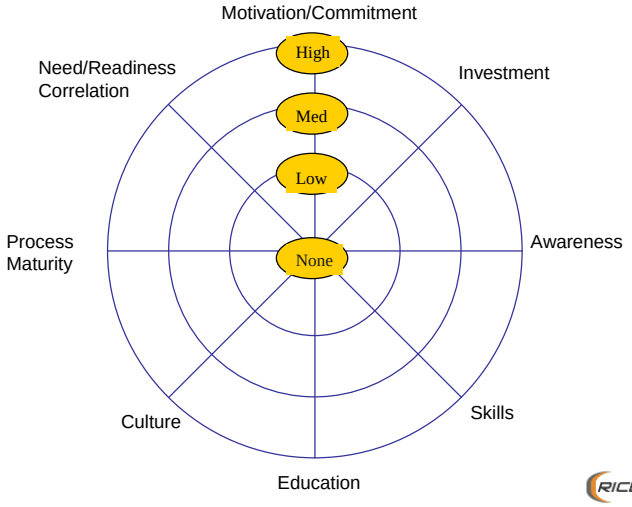
Readiness



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Then the Boardroom Presentation...

- All the major players from senior management were there:
  - CIO
  - VP of Marketing
  - VP of HR, and others
- It was a bad situation, highly risky to the business, but the VP of Marketing felt that things were fine.
  - "Don't slow anything down"

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Notable Quote

- "The only metric I care anything about is lost customers and we haven't lost any customers."
  - VP of Marketing

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My Response – An Analogy

- Imagine a restaurant where in the dining room, the customers are being served good food on time, with few complaints.
- Meanwhile, in the kitchen, confusion reigns.
  - Two out of three plates of food are being dropped on the floor, but the customers never know it.
  - Is this how *you* would like to do business?

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Results

- Because of the lack of senior management commitment, not much changed.
- The CIO left after a major failure led to merchants feeling the impact.
  - Also, many of the other talent left as well.
  - Oh, and there was also a loss of customers

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Lessons Learned

- Just because customers don't see problems doesn't mean they can be ignored.
- Listen to the team.
  - They know what's broken – and many times, how to fix it.
- Watch out for the knowledge walking out the door.
  - You can't just hire a developer (even an experienced one) to become an expert overnight.

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Lessons Learned (2)

- Don't let one outspoken person impact the future of the company.
  - Just because you're vocal and persuasive doesn't mean you're right.

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Situation #2

- Financial Processing Company on Wall Street
  - Highly critical systems
  - Four major (and greatly different) platforms
    - DEC
    - UNIX
    - Windows
    - Tandem (HP)

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Situation #2 (2)

- Over 500 releases of the major system in one year
  - Most releases were on weekdays
  - No change control
  - Very deadline-driven
- Three major test automation tools from different vendors in use on three distinctly different processing platforms
- Had a robust integrated test lab

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Situation #2 (3)

- No learning from past defects and problems
- No consistent or standardized process for testing.
- No consistent or standardized process for software development/maintenance.
- User/Business requirements not used as a basis for performing work, except in very large projects.
- Lack of control in testing which leads to an extremely high degree of risk.

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Situation #2 (4)

- However, there was a good level of senior management commitment
- Plus, the teams also were ready for things to be improved.

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Results

- We were able to unify some of the test automation and implement some good tools.
  - Reduced a daily test burden on one system from 8 hours to 15 minutes.
  - Increased the repeatability and reliability of the testing.
- Then…there was a re-org and the entire improvement effort died.
- However…because of the work that had been done, they were in a position to recover after 9/11.

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Lessons Learned

- Change control is about more than just configuration management.
  - The source(s) of change must be identified and controlled.
- Have a solid plan for implementing test automation and transferring knowledge of how to use the tools.
- Your test is only as good as your test environment.
- Don't neglect maintaining the test automation.

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Lessons Learned (2)

- Don't forget to test your business continuity plans.

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Situation #3

- Large HMO
  - Nationwide system failed daily
  - Test environments were not well-managed
  - Testing consisted of running software using a full copy of production data
  - Scored zero on the test assessment scorecard
  - IT organization very much out of control
  - Little or no training in software testing
  - Inadequate user requirements

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Results

- Streamlined the test data
  - Reduced the volume
  - Made the data reusable
  - Went from 8 hours per test to less than 1 hour per test.
- Improved test environments.
- Started performing the pre-implementation review *before* implementation instead of *after*!
- Encouraged agile teams.

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Lessons Learned

- Break down the barriers between teams
- Don't test in the production environment
- Perform QC of the implementation when it is supposed to be performed.
  - Don't just do things to "check a box" on a form.

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What's in Common?

- Lack of adequate user requirements
- Lack of repeatable testing processes
- Lack of skill building in software testing
- Lack of effective use of tools
- Lack of value added to the organization

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The Root Cause

- Why do all of these constraints exist?
- Lack of leadership and commitment from the highest levels of the organization.
  - Even in the situation where there was good management leadership, their management chose to break it up by reorganizing.

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Becoming a Catalyst for Positive Change

- First, recognize there is a risk for you personally.
  - You may become seen as a troublemaker.
  - You will need to be candid.
- Also, recognize that since you are in the situation:
  - You may not see things objectively
  - You may lack the "distance factor" to persuade senior management

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Becoming a Catalyst for Positive Change (2)

- However, with that stated:
  - Focus on the pain points and value-added message.
    - "How would you like an extra million dollars in your IT budget?"
  - Measure some basic things
    - The Cost of Poor Quality
    - The average cost per defect
  - Build strategic relationships

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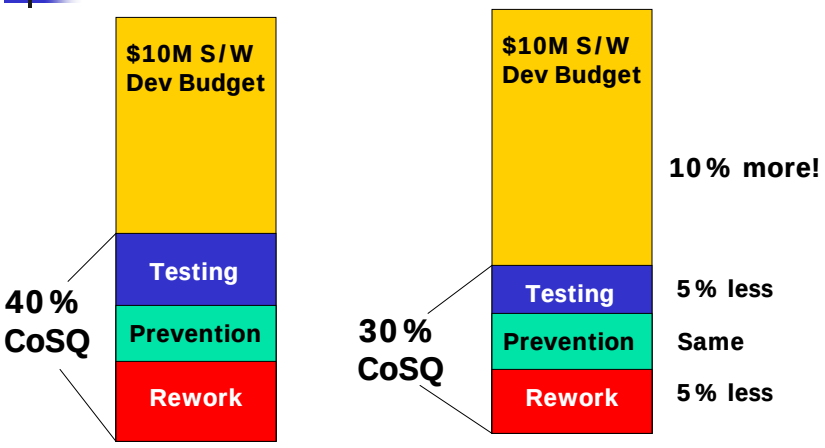
How Do I Get $1M Extra?



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Becoming a Catalyst for Positive Change (3)

- Wait for the "teachable moment" and then make a brief, but powerful point (positive and non-blaming).
  - Once again, "How would you like an extra million dollars in your IT budget?
  - Wouldn't you rather be doing something productive?

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There's one group that stands between "as-is" and "to-be"...

Management!

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There's one group that make make it happen...

Management!

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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
- ASTQB Certified Tester, Foundation level
- Certified Software Quality Analyst
- Certified Software Tester
- Certified Software Test Manager
- Treasurer of the American Software Testing Qualification Board
- 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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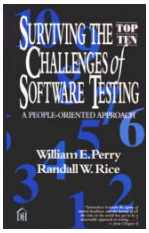

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