Learning How to Tell the Story

Behind Your Test Results

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Introduction

Karen N. Johnson	
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Program Co-Chair CAST 2008	The Call for Papers will be announced later this fall
Workshop Co-Founder WREST workshop	A new peer workshop focused on testing in the regulated industry

Agenda

1:45 – 2:45pm

- Presentation: please interrupt with questions
- Statistical Exercise

2:45-3pm Break

3-4pm

- Short Video
- Group Exercise
- Summary & Questions

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What test results are we discussing?

- Output collected from performance test tool.
- Performance transaction timings.
- Data gathered to assess an application's performance.
- Data gathered might include network, CPU, and disk information.

What is the analysis process?

A data analysis process:

- – Compile Data
- – Graphical Data Analysis
- – Charting in Excel
- – Build a narrative that features Excel charts

But is the analysis process this simple?

Why is analysis so complex?

A look at analysis raises more questions:

- What is the thinking that takes place during the analysis process?

- What is the analysis process?

- How do we *really* analyze?

Disciplines Behind and Around Analysis

Analysis involves skills from multiple disciplines.

- Organizational: compile, sift, filter, group
- Graphical exploration; to look at data in multiple ways
- Excel: compile, summarize, chart
- Statistics: mathematical approach to the data
- Storytelling without exaggeration
- Presentation skills to deliver the information

There is more than one path for data analysis

"Exploratory data analysis is an attitude, a flexibility, and a reliance on display, NOT a bundle of techniques, and should be so taught."

- John W. Tukey, We Need Both Exploratory and Confirmatory, The American Statistician

Our purpose is to find the meaning in test results and to be able to tell the story from our analysis in order to bring meaning to data.

Analysis begins at compiling results

- Stocktaking
- Inclusion
- Exclusion
- Compare
- Contrast

Analysis continues through statistical observations

- Outliers
- Standard deviations
- Average, mean, medium
- Confidence intervals
- Sample sets
- Compare
- Contrast

Analysis *can* include graphical exploration

- Build the default Excel chart

- Observe the default chart and

- Refine chart until the chart represents your knowledge and experience with the application

Charting helps *find* information

- No bullets on a slide can take the place of seeing and watching the building process.

- Let's step out of the power point and step through analysis together.

Storytelling and Presentation

- Our stories need to be crisp, clean, and relevant.

- Our presentations and reports will be more robust when we combine our experience with the application and the data that we've harvested from testing vs. just telling the facts.

- Our presentations need to be ready and rehearsed. We have to be able to collapse and expand the information we have to fulfill our stakeholders' needs and to address their time constraints.

Summarizing the Analysis Process

- It can be a messy non-linear circular thought process
- Not usually accomplished in one pass or cycle
- Can include the discovery of information you were not expecting
- Can result in more than one conclusion
- True information learning is unlikely to come to life for other people through your power point slides alone
- If you can build a narrative with the data to tell the story and expose the meaning in the data, then you've delivered decision-making information and not just test results.

People to learn from

Resource	Area
Edward Tufte	Graphical Analysis
Bill Jelen	Mr. Excel
Hans Rosling	Data Presentation
Michael Starbird	Statistics

References

- Hans Rosling, see: http://www.ted.com/index.php/talks/view/id/92 and http://www.ted.com/index.php/talks/view/id/140

- Karen N. Johnson, *Performance Testing: How to Compile, Analyze and Present Results* (http://www.karennjohnson.com/pdf/perf_testing.pdf)

- "Charts and Graphs for Microsoft Office Excel 2007" by Bill Jelen, ISBN 0-7897-3610-1

- "The Visual Display of Quantitative Information" by Edward R. Tufte, ISBN 0-913921-0-X

- "The Cognitive Style of Power Point: Pitching Out Corrupts Within" by Edward R. Tufte, ISBN 0961392169

- "Envisioning Information" by Edward R. Tufte, ISBN 0-9613921-1-8

- The Teaching Company, "Meaning from Data: Statistics Made Clear" DVD course by Professor Michael Starbird, ISBN 1-59803-146-5

Thank You!

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