

# Nine Secrets of Software Measurement

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**REAL LIFE ADVENTURES** By Wise & Aldrich

WISE/ALDRICH

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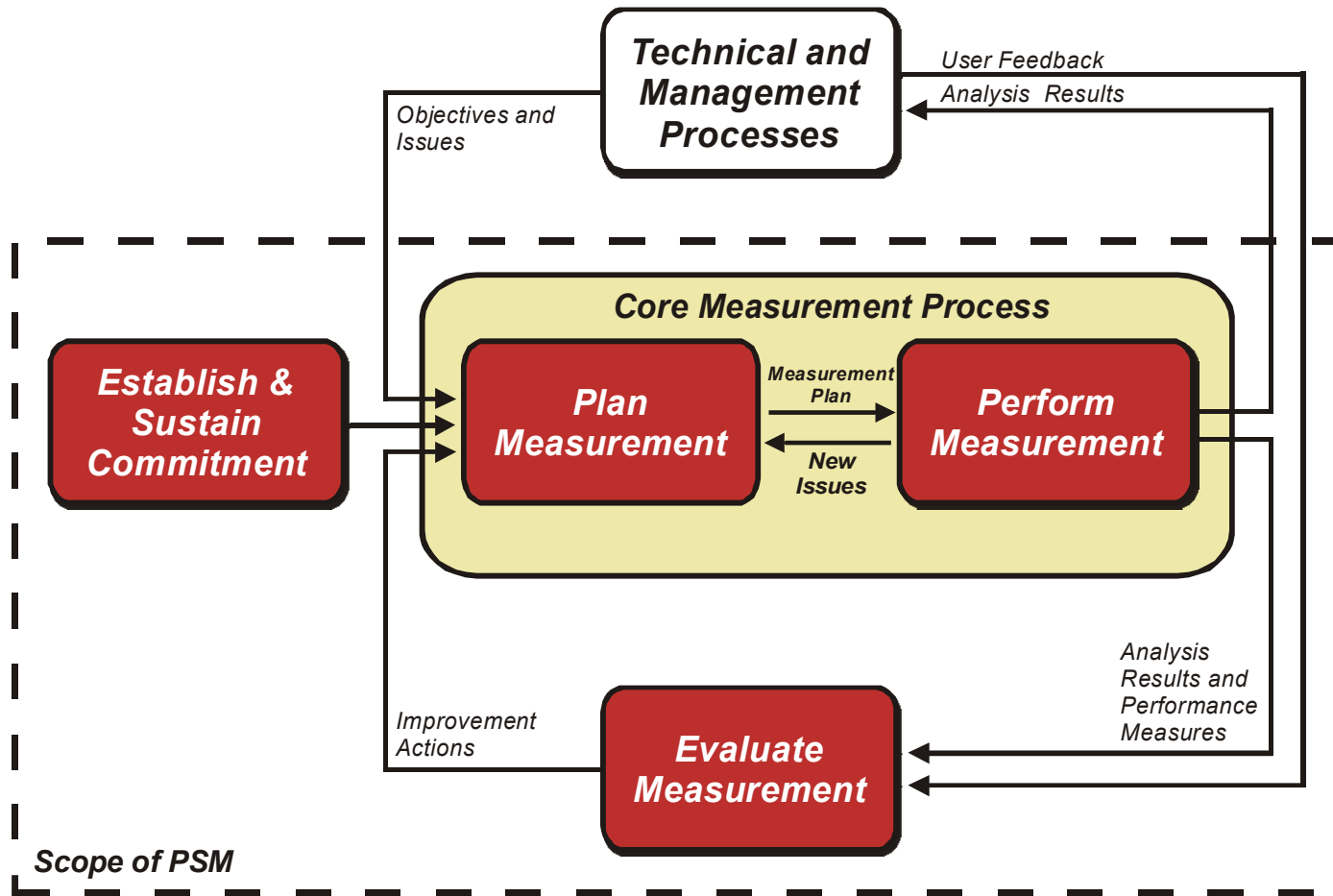
Many times, the body language of the audience will tell you how your presentation's going.

# Why Secrets?

- Not obvious at the beginning (at least not to me)
- Major factors in measurement success or failure



# #1: What happens outside the measurement box is critical



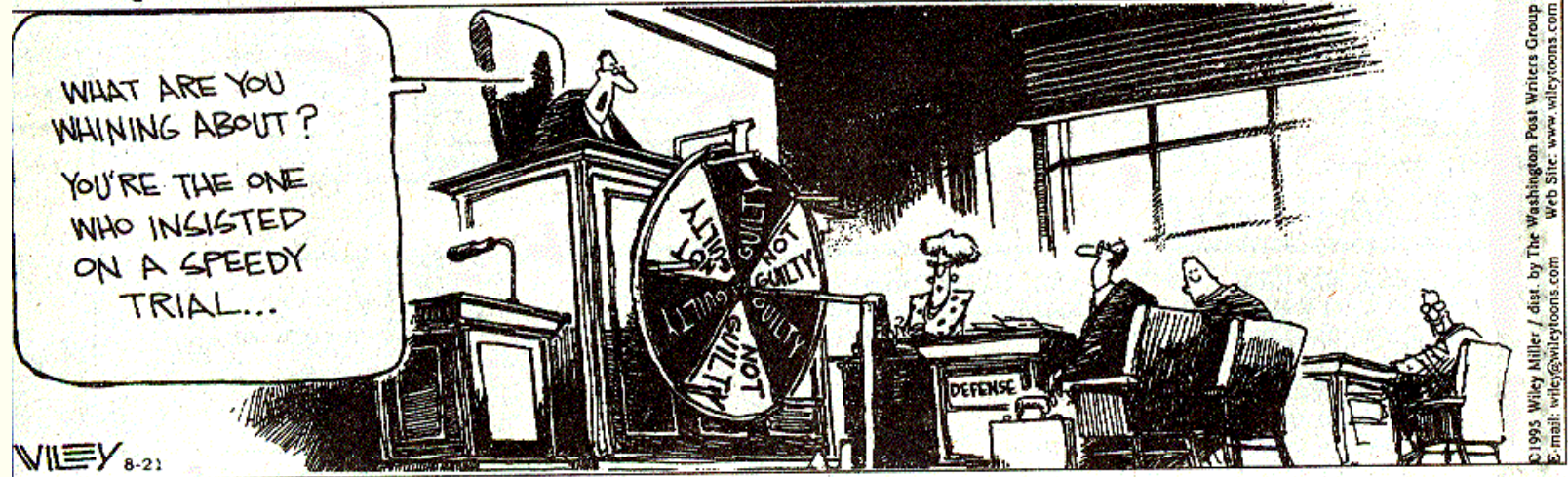
# #1: What happens outside the measurement box is critical

- It's what happens before and after the measurement folks show up that matters most
- Senior-level sponsorship is not enough
- Making measurement work means changing the way managers manage

# #1: What happens outside the measurement box is critical

- Measurement without active involvement outside the box misses the point

NON SEQUITUR WILEY





## # 2: Establishing a measurement program is easy. The hard part is keeping it going.

- “Quitting smoking is easy. I’ve done it a hundred times”  
- Mark Twain
- Our million-dollar question as consultants
  - “When we’re gone, will the measurement program continue?”



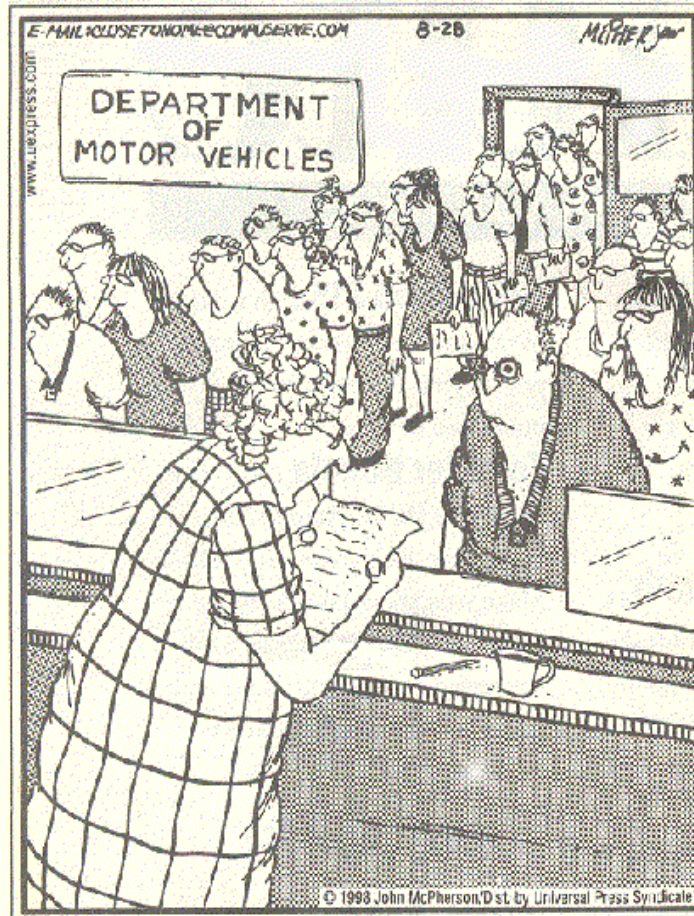
# # 3: Don't go overboard trying to be perfect

- The best way to implement a measurement program is to start measuring.
- Specification comes after the measurements have stabilized.



## # 3: Don't go overboard trying to be perfect

CLOSE TO HOME JOHN MCPHERSON



**"You missed a section here. We need to have the serial number and tensile strength of each of the seat belts in your car before we can process your registration."**

# # 4: People skills matter more than quantitative skills

- 90% talking to people, 10% dealing with data

# # 4: People skills matter more than quantitative skills

**CLOSE TO HOME** JOHN McPHERSON



**From the moment the new consultants arrived, full-time employees at Watkins Industries sensed an air of condescension.**



# # 4: People skills matter more than quantitative skills



# # 5: Measuring individuals can be okay



# # 5: Measuring individuals can be okay

- “Everyone’s accountable, all of the time.”

Rudolph Giuliani in *Leadership*\*

- There are counterproductive measures as well as appropriate ones
  - Counterproductive: SLOC per labor hour, especially when people are rewarded or punished
  - Appropriate: Detailed progress measures beginning with the individual

\* Rudolph W. Giuliani, *Leadership*, Hyperion, 2002.

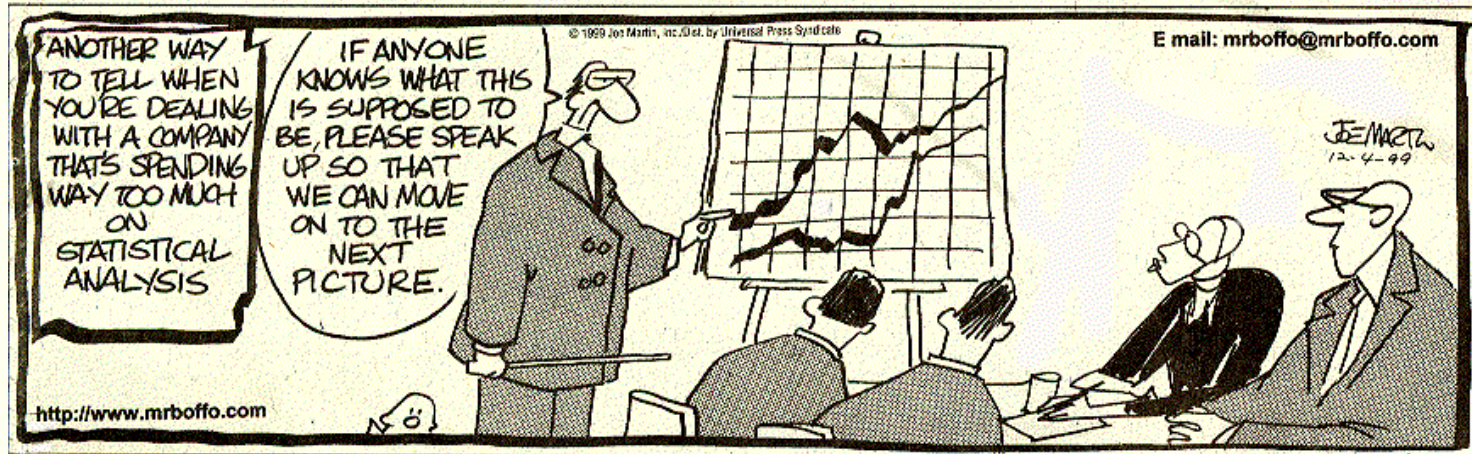
# # 6: People don't always know what their information needs are

- The likelihood that information needs are known is a function of the strength of negative or positive motivation
  - Negative: Degree of pain
  - Positive: Understanding of improvement path
- When organizations are “coasting”, identifying information needs can be difficult



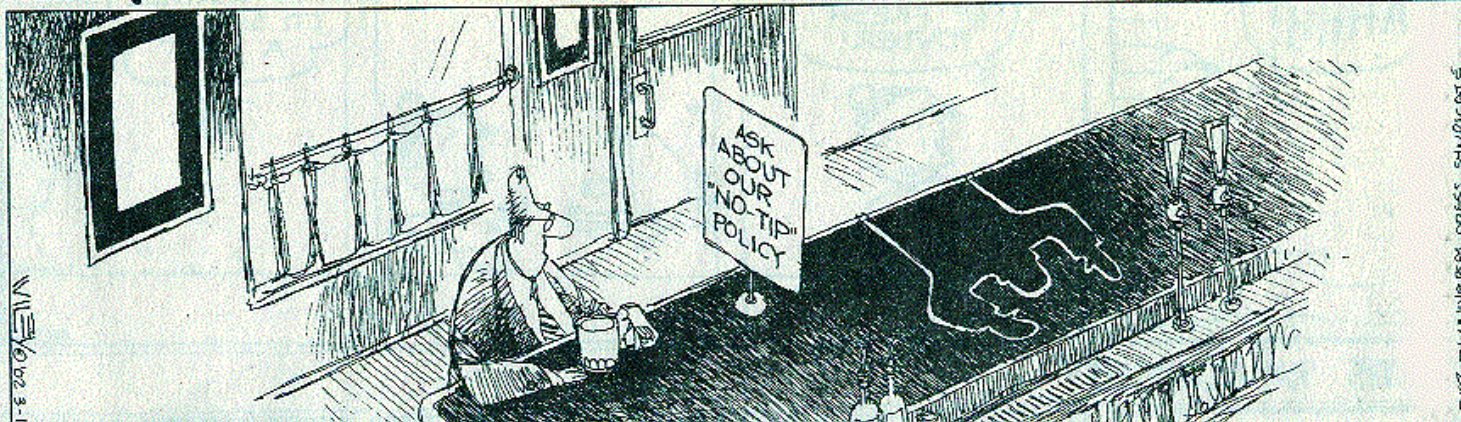
# # 6: People don't always know what their information needs are

**MR. BOFFO** JOE MARTIN



# # 7: Graphics, graphics, graphics

NON SEQUITUR WILEY



# # 7: Graphics, graphics, graphics

- Showing people graphical indicators helps them
  - Clarify information needs
  - Understand which measures are useful

# # 8: Tools are important

- Especially ease of data entry, navigation for data providers



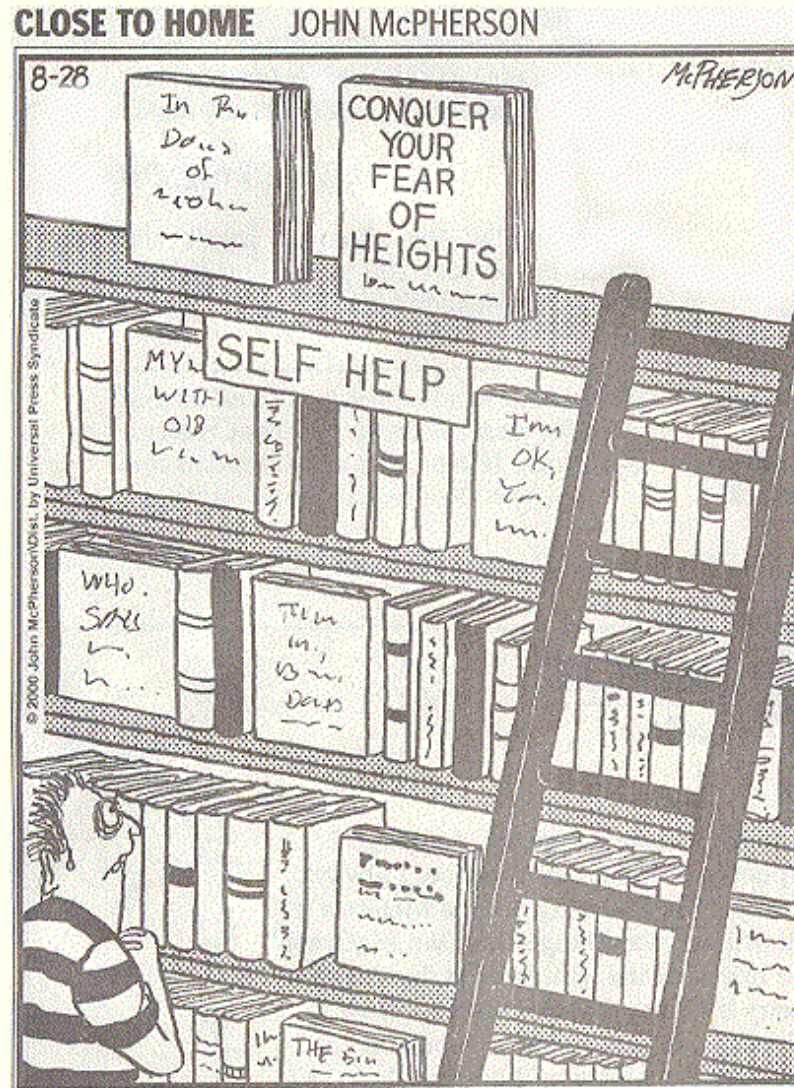
# # 8: Tools are important

CLOSE TO HOME JOHN MCPHERSON



“Yeah, right! That makes sense! Let’s go spend \$150 for a new VCR just because the rewind mechanism on this one is broken, when our power drill rewinds tapes just fine!”

# # 8: Tools are important

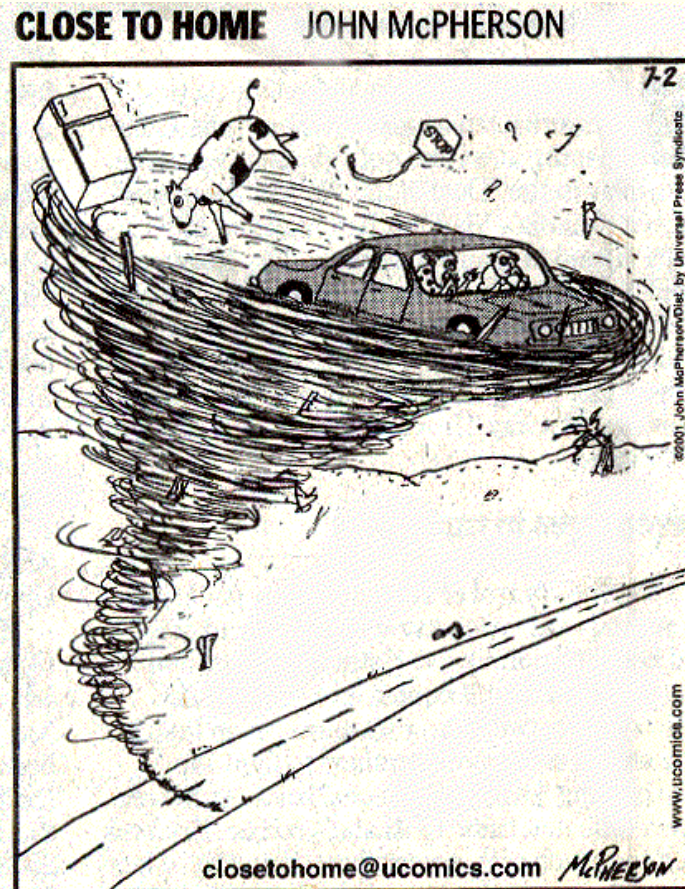


## # 9: Understanding the reasons for variability in the data provides a powerful decision tool

- Data has a large amount of variation
  - e.g., size vs effort or defects
  - Often represented in logarithmic scales
- Need to collect additional data to explain variation (e.g., cost driver ratings)
  - In one organization, personnel turnover was associated with the most variance across projects
  - A 12% increase in personnel turnover resulted in a 36% increase in effort
    - Makes monetary sense to minimize turnover



# # 9: Understanding the reasons for variability in the data provides a powerful decision tool



"Try pumping the brakes!"

# Recommendation: Excellent Example of Effective Measurement

- Rudolph Giuliani credits his measurement process with turning New York City around
- Described in his book *Leadership*

# Giuliani's use of measurement

“The centerpiece of our efforts was a **process** called Compstat.”

- Began in Police Department
- Clarified the purpose of the Police Department and crafted indicators to tell us whether goals being met
- Data collected and analyzed every day
- Used to predict trouble spots before they occurred and to hold boroughs' “feet to the fire”
- Demoted those who didn't have their heart in it, promoted those who did

Rudolph W. Giuliani, *Leadership*, Hyperion, 2002.

# Giuliani's use of measurement – cont.

- Implemented an on-line data entry system for police officers
  - Analyzed data daily by geographical area, trends over time in different crime categories
- Implemented an auditing system to flag statistically unrealistic performance
  - Commanders were removed for altering data
- Compstat reports distributed throughout the department
  - Everyone can see which precincts are improving and learn from successful ones

# Giuliani's use of measurement – cont.

- Heart of the Compstat process was weekly meeting
  - Discussed the data and appropriate actions
- “The impact of Compstat was immediate and revolutionary.”..It became the crown jewel of my administration's push for accountability – yet it had been resisted by many who did not want their performance to be measured...Compstat was true culture shock.”

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