Root Cause Analysis: Helping make the right decisions

JEREMY BERRIAULT, MBA

Introduction

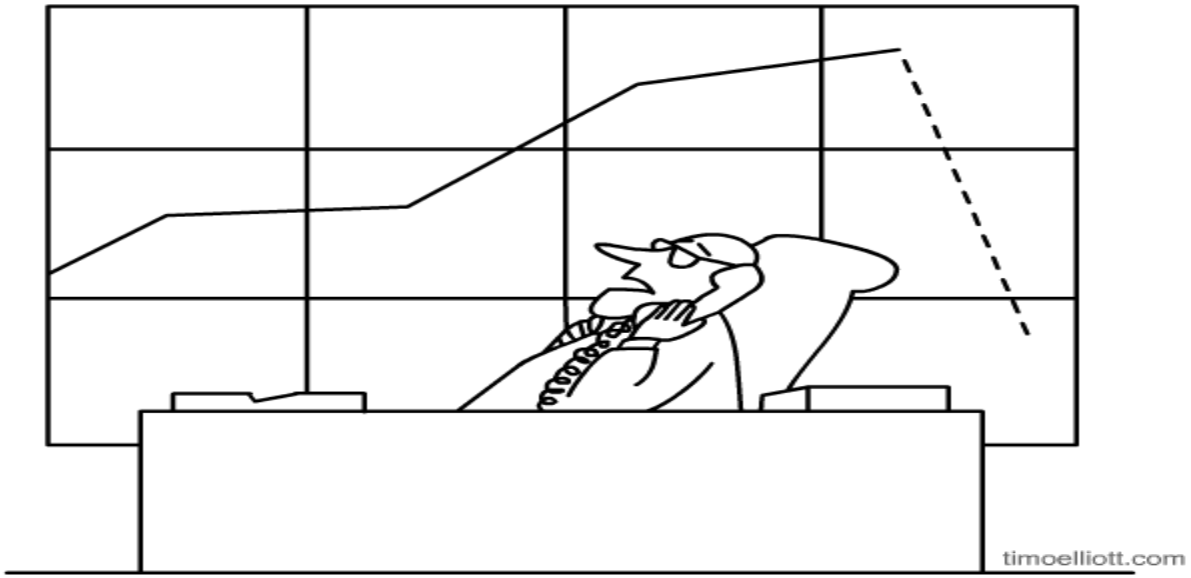
Presenter

- QA for over 20 years
- Started as a UAT analyst
- Very passionate about QA and its impact
- MBA from Athabasca University

Presentation

- How to use metrics to make positive change
- Current pitfalls
- Getting the right information to the right people

Making decisions



"Yes, I have made a strategic decision.
I've decided to ignore the bad news... "

"...the efficient production of the quality that the market expects." W. Edwards Deming - was an American statistician, considered the **father of the modern quality movement**

Sound familiar?

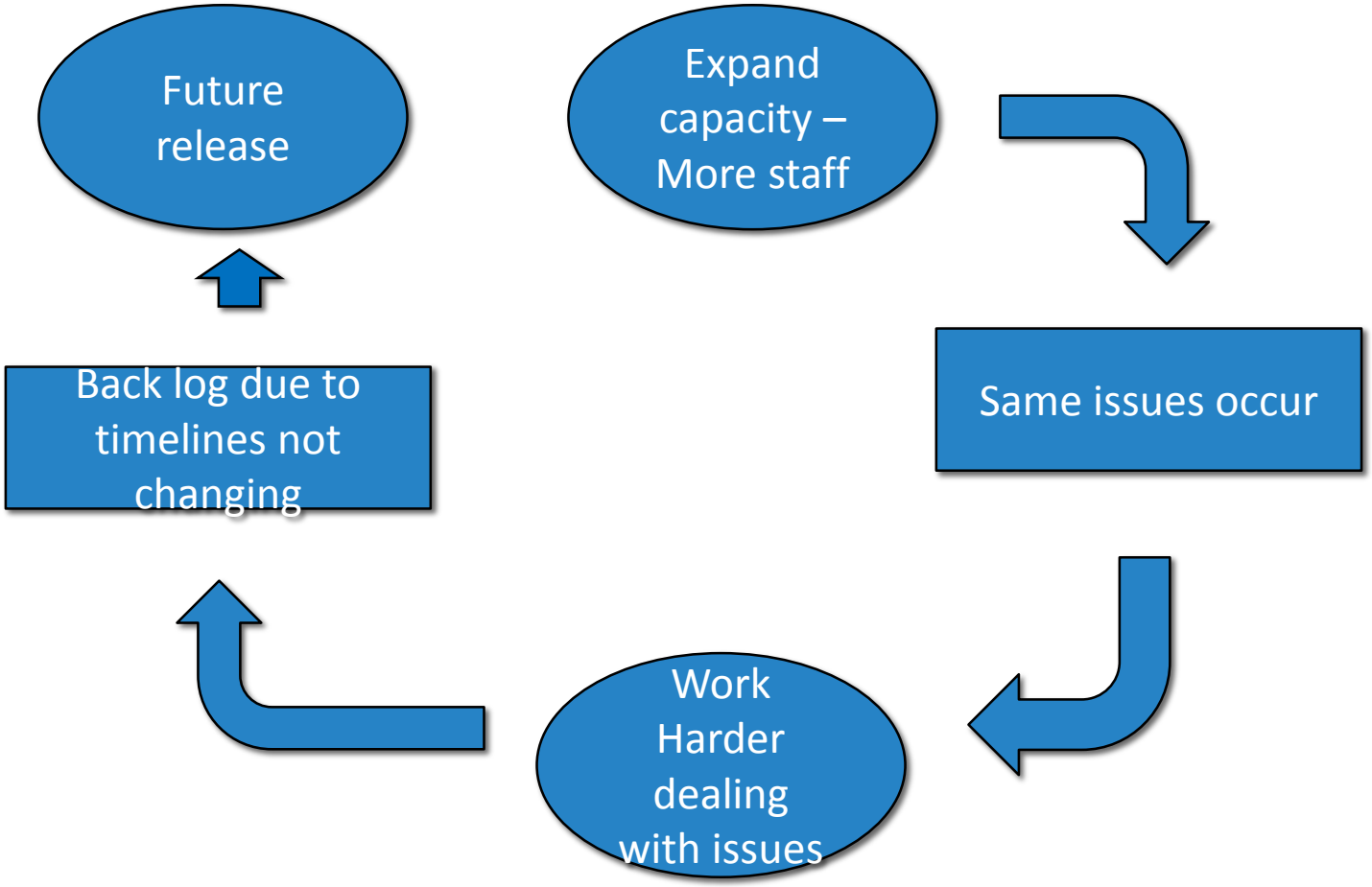
Root Cause	Defect count
Requirements	3
Code	15
Environment	4
Design	2
Testing	1

Decisions that can be made

- Options
  1. Expand capacity – More staff
  2. Work harder – O.T.
  3. Keep fixing things – Releases

- #2 and/or #3 – the “easy way out” and produces a vicious circle of not having time to improve, so more problems occur.
- #1 is meant to be the real ‘solution’ but almost always turns into #2 and/or #3

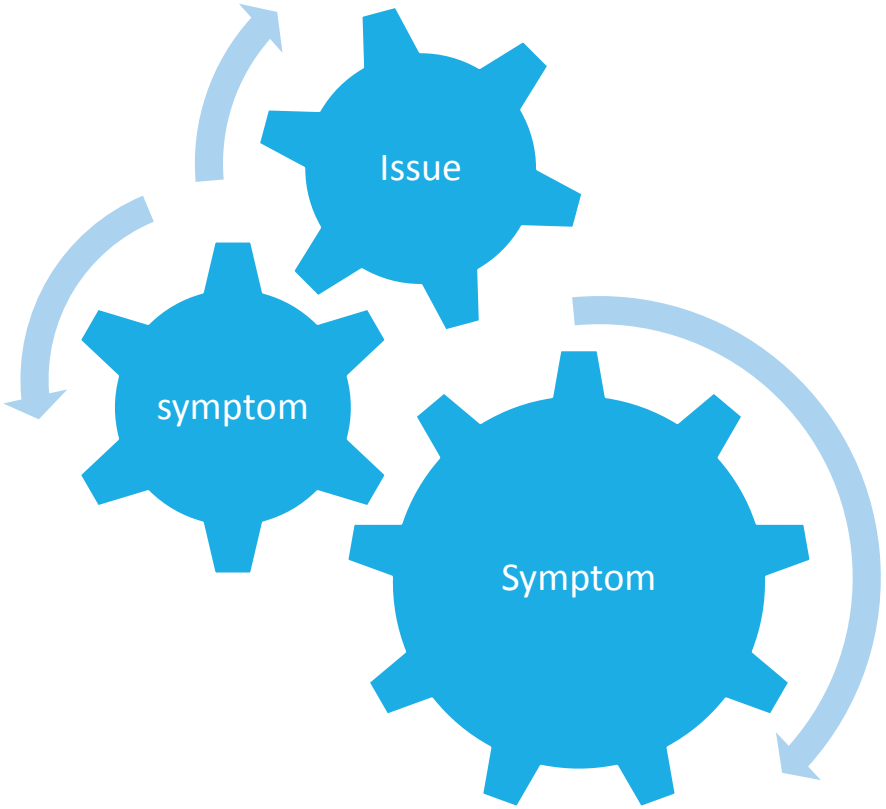
Decisions that can be made



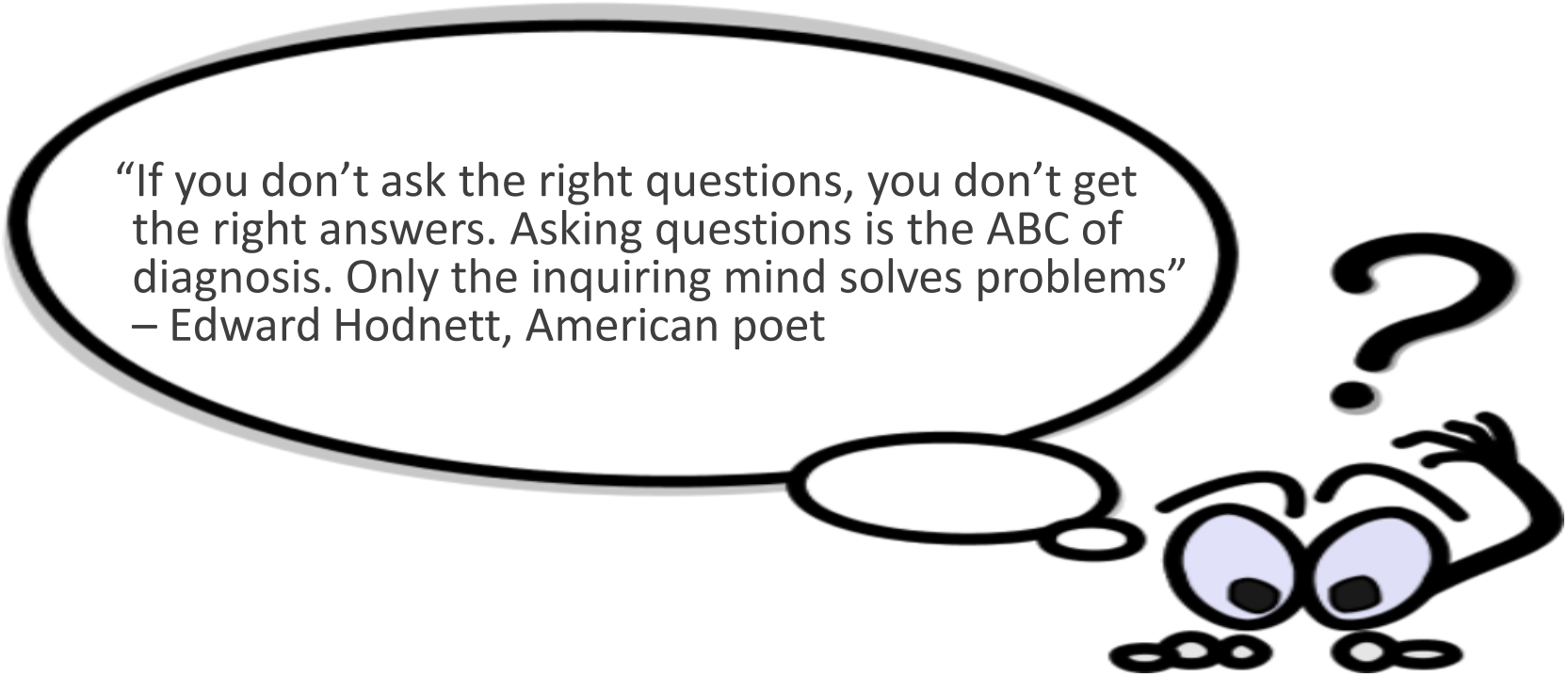
Rework

"…Re-work costs make up 30 to 50% of the average IT project." Barry Boehm, Software Engineering Economics.

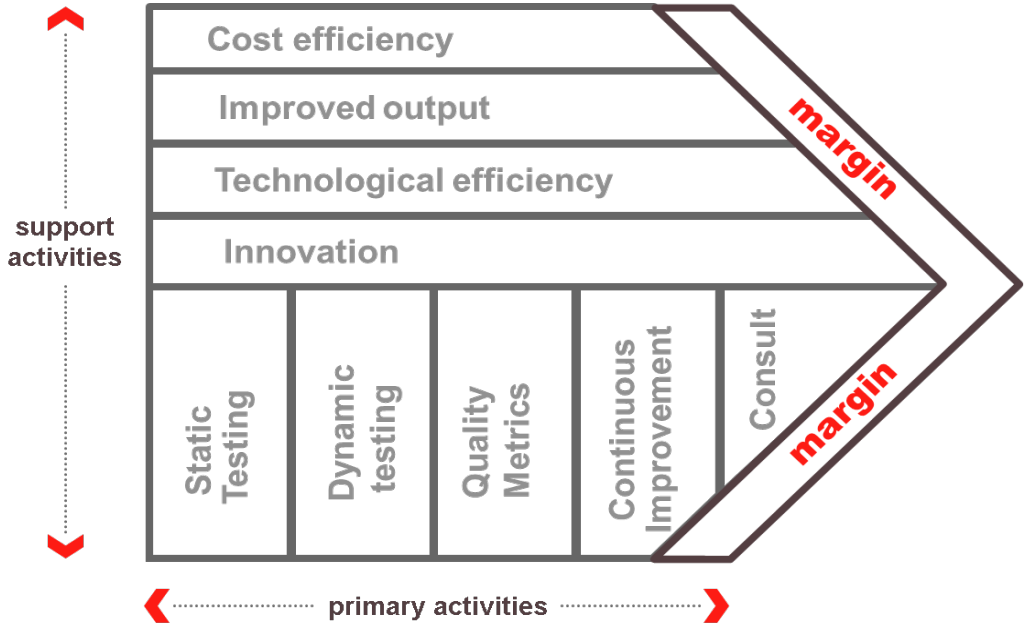
Focused in wrong area



"If you don't ask the right questions, you don't get the right answers. Asking questions is the ABC of diagnosis. Only the inquiring mind solves problems"
– Edward Hodnett, American poet



Provide value



source: Michael Porter, competitive advantage

Continuous improvement is the main activity where RCA provides value

Provide more options

- How can we fix it?
  - Team driven solutions
  - Process or system based – not human

- Is it worth it?
  - Cost of fixing process VS. dealing with the symptom

OR

Data, data and more data

"When you two have finished arguing your opinions, I actually have data!"

What’s the story?

FreeDigitalPhotos.net

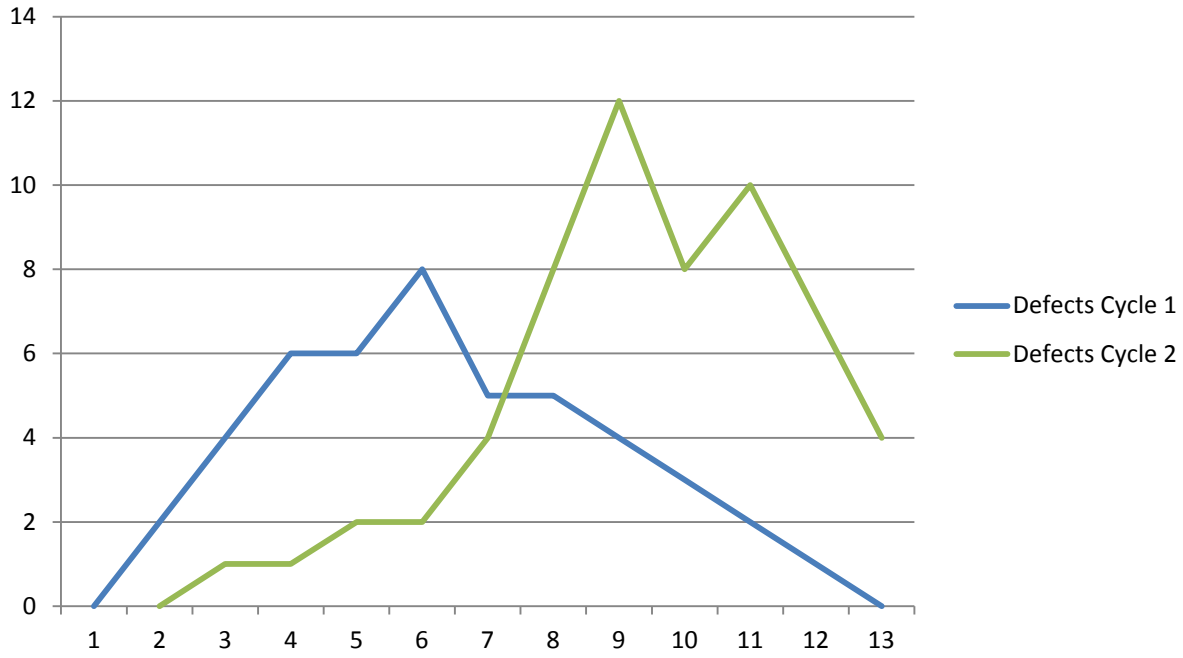
Where are the repeated bottlenecks

- **Process slow downs**
  - Where are the true slow downs
    - Hard to find
    - Percentage rework – Time spent

Numbers game

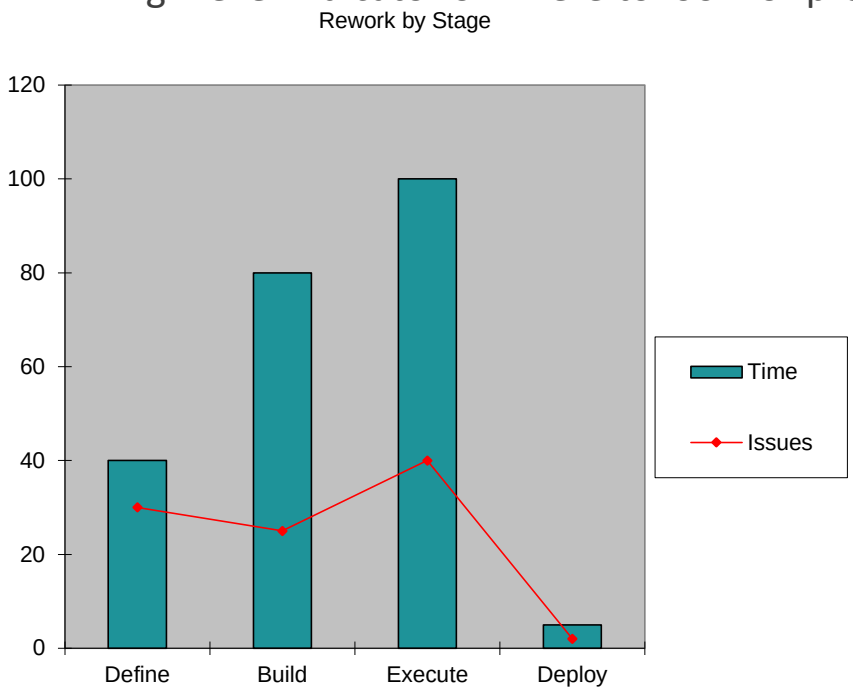
- Ratios
  - Helps determine relationships
    - Six Sigma
- Correlations
  - Graphs
  - Can show impacts
    - Regression analysis
- Cost benefits
  - Average cost of defects
    - Detailed Root Cause
    - Tracked over time
  - Forward thinking
  - Potential solutions

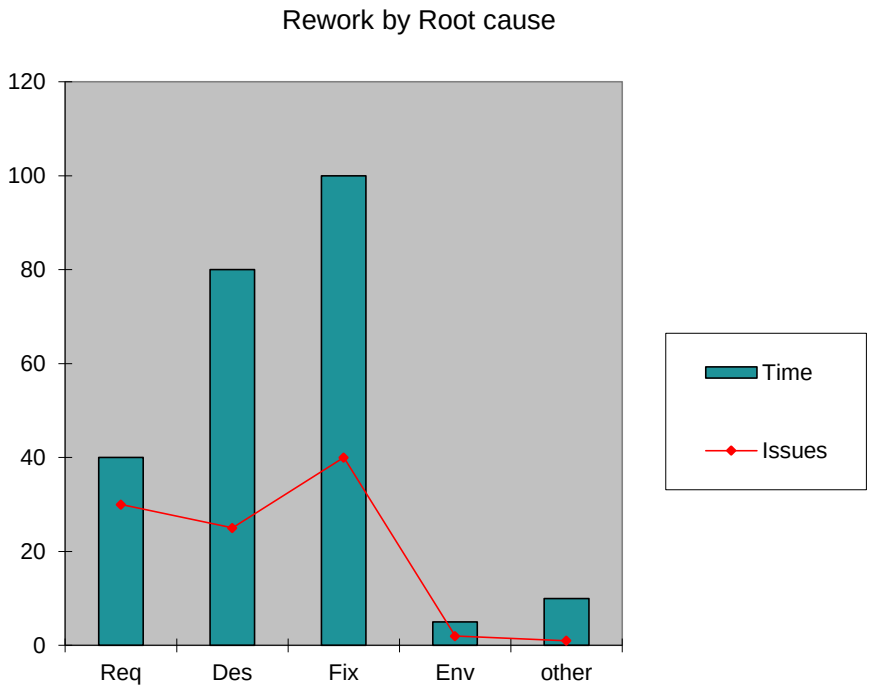
Histogram


14
12
10
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
Defects Cycle 1
Defects Cycle 2

Issue points

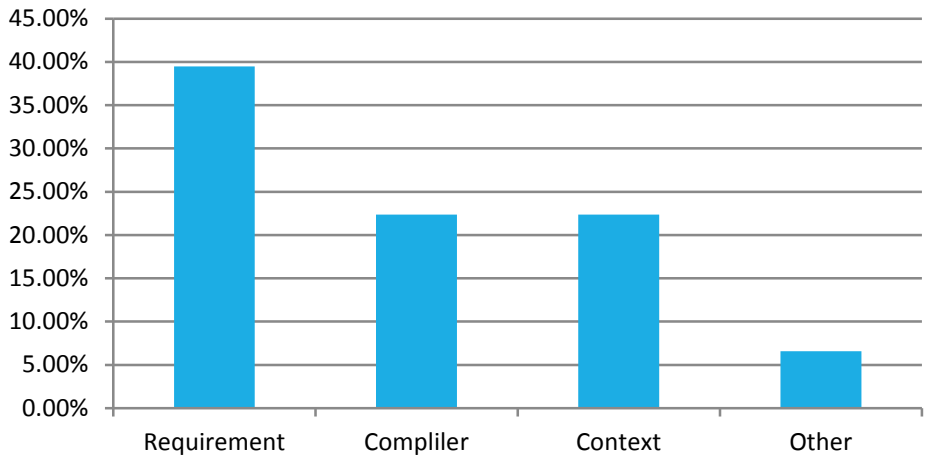
- What are issue points
  - Show the total number of issues along with total time spent.
  - Facilitates predictive quality analysis
  - High level indicator of where to look for problems





Tools to use for RCA

- **Pareto Chart**
  - 80/20 rule
  - Helps narrowing down repetitive issues



Are we done?

“Great things are not done by impulse, but by a series of small things brought together.” – Vincent Van Gogh (11)

What does Root Cause Analysis do?

- Avoids Common sense
  - No longer treating symptoms

- Avoids Laying blame
  - Creates a collaborative environment
  - Organic communication across disciplines

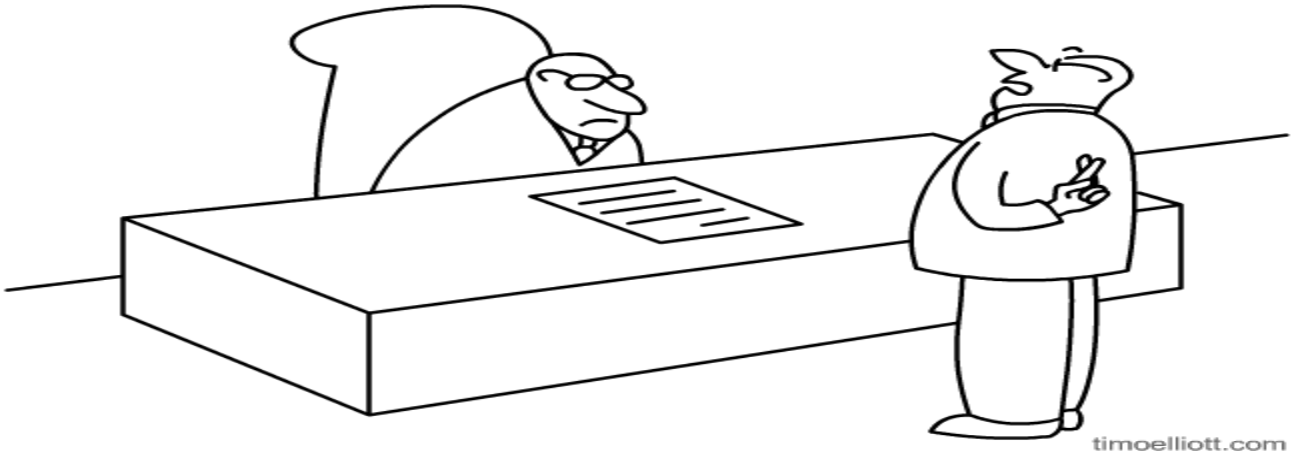
- Gives meaningful data
  - Continuous growth
  - No more do well/Do better

What does Root Cause Analysis do?

- Which process(es) are broken?
  - Is there a bottleneck?
  - Is there a miss?
  - Are the right peripheral processes connected?
- What needs fixing?
  - System lag?
  - Compatibility?
  - Correct version?
- Repetitive?
  - Does it happen in most projects?

Where do we need to start?

- Metrics, metrics, metrics
  - Must use the right metrics to tell the right story
- Must be confident



"Yes sir, you can absolutely trust those numbers"

What else do we need?

- Open lines of communication with all stakeholders
- Keep it going

"Let's say you want to save millions of dollars — you just push this button here..."

"I'm making a decision! Stop confusing me with facts!"