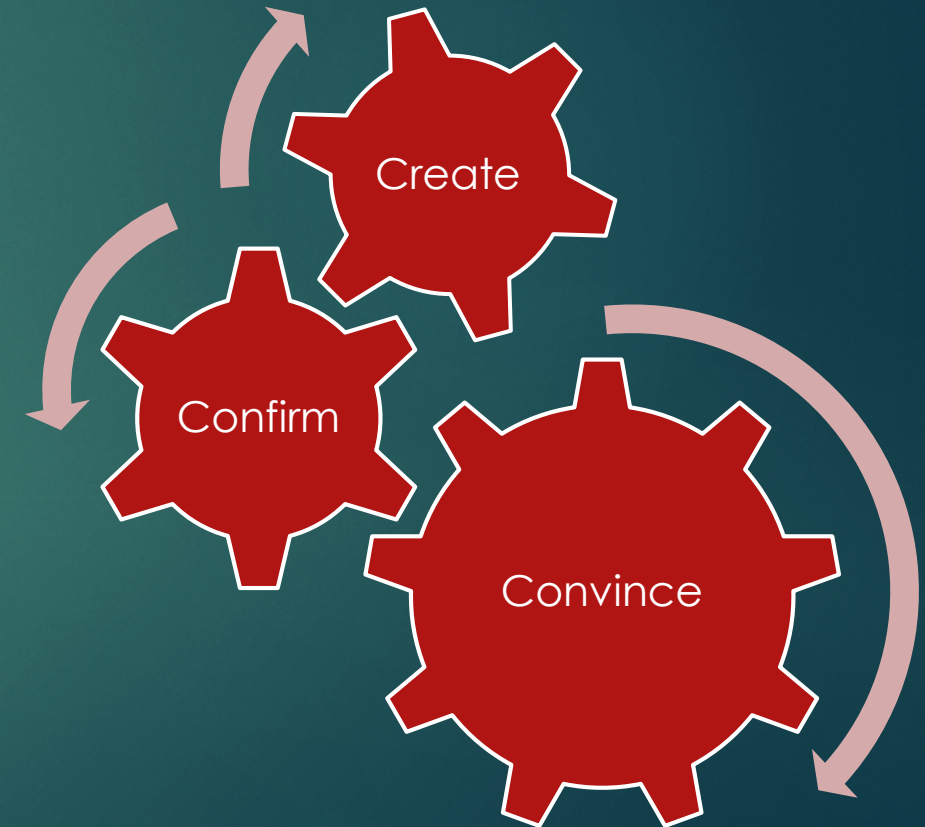


Three C's of Measurement and Cost Estimating Success: Create, Confirm, Convince

*Carol Dekkers PMP, CFPS (Fellow), P.Eng, CSM
President, Quality Plus Technologies, Inc.
dekkers@qualityplustech.com*

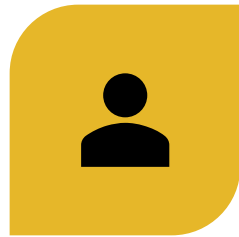
*Daniel B. French PMP, CFPS, CSM
Principal Consultant, Cobec Consulting
dfrench@cobec.com*



ISMA 16 TOPICS



FUNDAMENTAL
CHALLENGE?



C LEVEL
EXECUTIVES



CREATE



CONFIRM



CONVINCE

Who am I?



Credentials:

- B.Sc.ME + PMP + CSM + P.Eng.

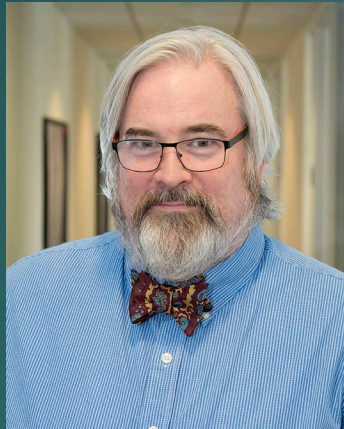
CFPS (Fellow) and ISO project editor

Consultant, author, speaker, observer, student

- 75+ articles, 10+ textbooks, 500+ presentations

Committed to FSM success 25+ years

Who am I?



Credentials:

- B.Sc. Economics + PMP + CSM + CFPS

CFPS for almost 20 years and FSSC Chairman

Consultant, cost estimator, speaker, advisor, project manager

- Consulting for DoD, Gov't, and private sector clients, presenter at IFPUG, IPM, and ICEAA. Currently working on ICEAA SEBoK and CEBoK update

Committed to FSM and software estimation success 20 years

The Fundamental Challenge

(to ICEAA and you today)...

“... is proving that Agile Communities
can benefit from **FSM**” *<measurement>*

**Mauricio Aguiar, IFPUG President,
CEO Ti Metricas
Oct 2018**



Smart Minds think similarly 2012...

“How do I convince senior executives (often CEOs) and public officials that

Functional Size Measurement

is important and an essential strategy for
–pick your ending– performance
excellence, competitiveness, growth,
sustainability, survival, efficiency,
effectiveness ?”

...of agile software development?



C level executive...



“...cares about profits, revenues, earnings, and market share...short-term/long-term tradeoffs, risk, time to market, return on investment”

Quality Meets the CEO by Jeffery E. Payne



Key elements of CEO decision making: Intent, Information, Education

Quality Meets the CEO by Jeffery E. Payne



Measurement = objective proof...

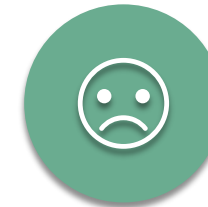
Translates feelings into facts



Feeling → Product delivers value to stakeholders
Proof → FP size



Feeling → Highest value functions delivered first
Proof → Relative FP



Feeling → Backlog size is growing
Proof → Overall size FP



Feeling → We are more productive than competitors
Proof → FP / Pers. Mo.



Feeling → Agile is better (less rework)
Proof → FP churn

FSM = product size

Fact based proof for developers, but...

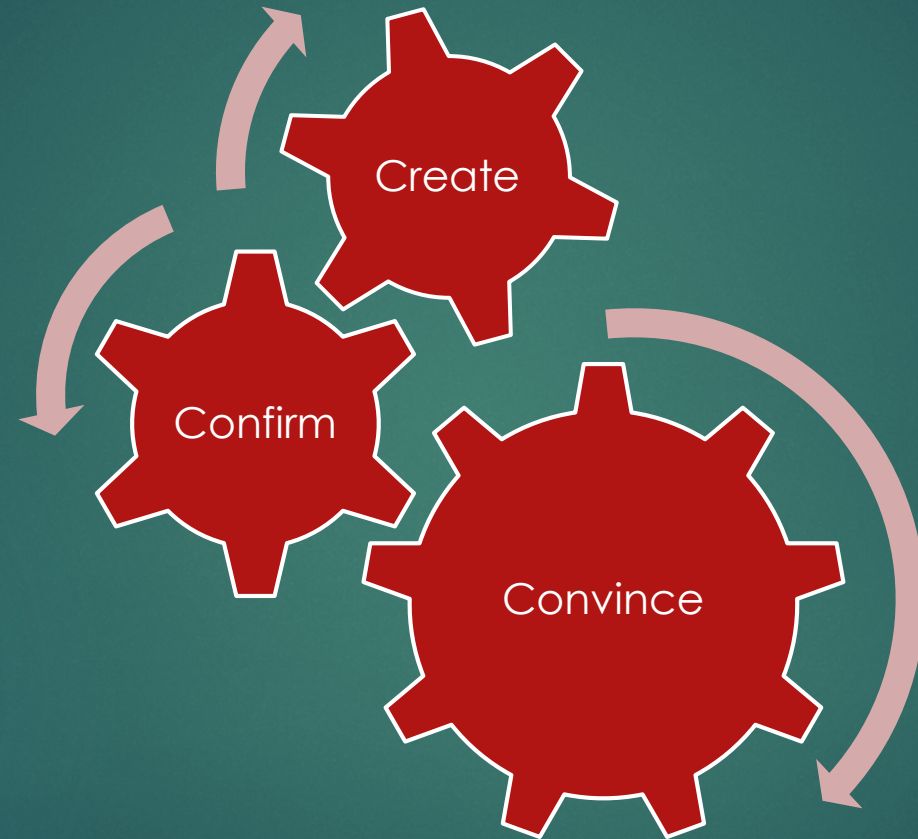
C level executives want to know...

- ? Short-term return (#)
- ? Long-term return (#)
- ? Risk of non-delivery (% , mitigated)
- ? Proven past success (or pilot with ROI)
- ? Information or education (goal)
- ? Awareness of competing proposals
- ? Quantify in C level terms (\$\$\$)

Quality Meets the CEO by Jeffery E. Payne



Where to start?



Create Measures that Matter (i.e., Relevant to Agile)

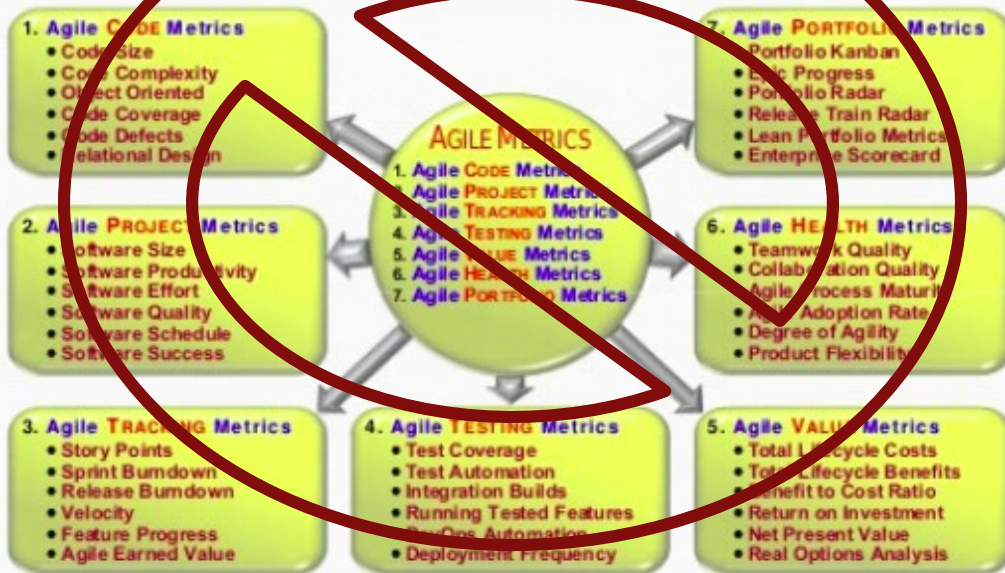
- ▶ What to measure → Driven by WHO needs measures
- ▶ Goal, Question, Measure (GQM) can help
- ▶ Define measures:
 - ▶ Efficiency → Better (Faster? Cheaper? Less rework? Higher/same quality?)
 - ▶ Effectiveness → Right product @same/lower price
 - ▶ Shareholder value → ROI (Increase output/input)



Dr. David Rico – Business Value of Lean & Agile Metrics

Agile Methods—Metrics Taxonomy

- Agile methods are based on traditional measures
- Story points, velocity, and burndown basic metrics
- Experts use Agile EVM, test, ROI & portfolio metrics



Rico, D. F., Sayani, H. H., & Sone, S. (2009). *The business value of agile software methods*. Ft. Lauderdale, FL: J. Ross Publishing.

23

C level execs want to know:

- ? Short-term return (#)
- ? Long-term return (#)
- ? Risk of non-delivery (%
mitigated)
- ? Proven past success (or
pilot with ROI)
- ? Information or education
(goal)
- ? Awareness of competing
proposals
- ? Quantify in C level terms
(\$\$\$)

Quality Meets the CEO by Jeffery E. Payne

Why do
(should)
executives
care about
software size?



- ▶ They don't... **unless it is in context with other measures:**
 - ▶ Cost (savings)
 - ▶ Value (investment)
 - ▶ Competitiveness (speed to market)

Typical Agile Project Estimation



Sprints → time-boxed at 2-4 weeks → estimate what can go into a sprint



Agile **Size Estimating**
Methods typically include:

T-Shirt Sizing (Sm, M, L, XL...)
Story Points/Planning Poker
Use Case Points



Based on team / org velocity → sprint is assigned user stories/capabilities to be delivered (during sprint)



Agile does not = Adhoc... Estimates, Metrics and Schedules important !!!

The Challenges with Agile Estimating Methods (Not a problem with FP...)

All are subjective and cannot be replicated, even within the same teams

Significant variation within and between teams

No rules on how to size

Inconsistent and unpredictable

Cannot be used to develop reliable productivity, cost or quality metrics

Cannot be used to evaluate against industry data

Optimistic bias

Difficult to determine Velocity, especially when first implementing Agile

Using IFPUG function points can address most of these limitations

***** FSM (Function Points) provides objective sizing for use in agile projects!**

Confirm measures

- ▶ Reliable (and repeatable)
- ▶ Correct (audited)
- ▶ Validated (do the # make sense?)
- ▶ Proper units of measure
- ▶ Plan presentation



It is important to state the obvious
otherwise it may be overlooked.

Peter Drucker

Convince

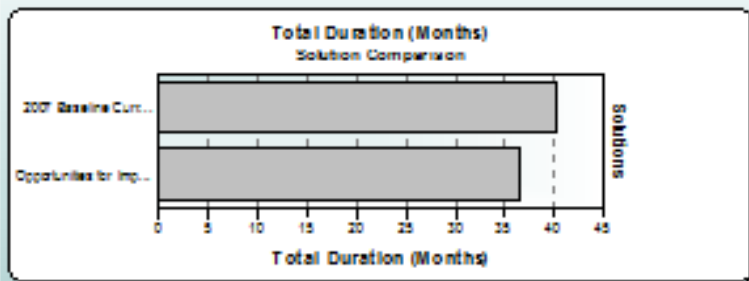


- ▶ Selling → negative connotation
- ▶ Present → show proof (neutral)
- ▶ Decision making:
 - ▶ Analysis – intellectual (#)
 - ▶ Buy /decide – emotional
 - ▶ Post-decision – intellectual justification

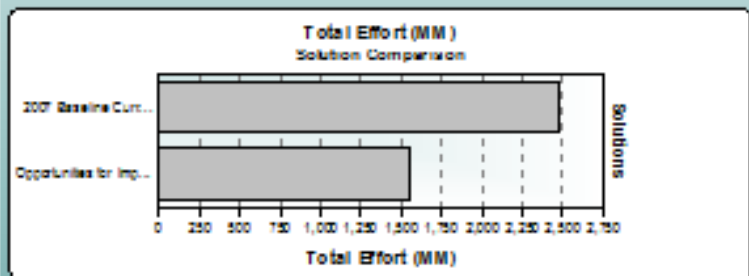


Benefit of Implementing Recommended Changes: \$7.2 Million

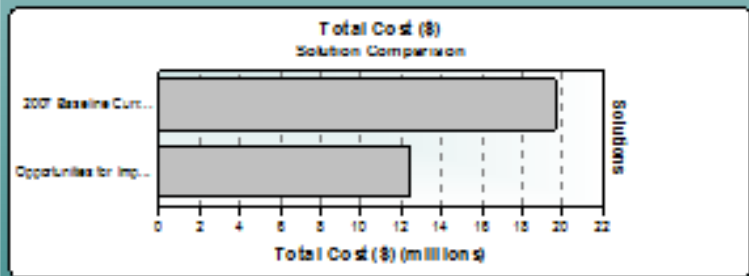
Benefits of Change



Solution	Total Duration (Months)
2007 Baseline Current State	40.03
Opportunities for Improvement	36.57



Solution	Total Effort (MM)
2007 Baseline Current State	2,469.45
Opportunities for Improvement	1,553.01



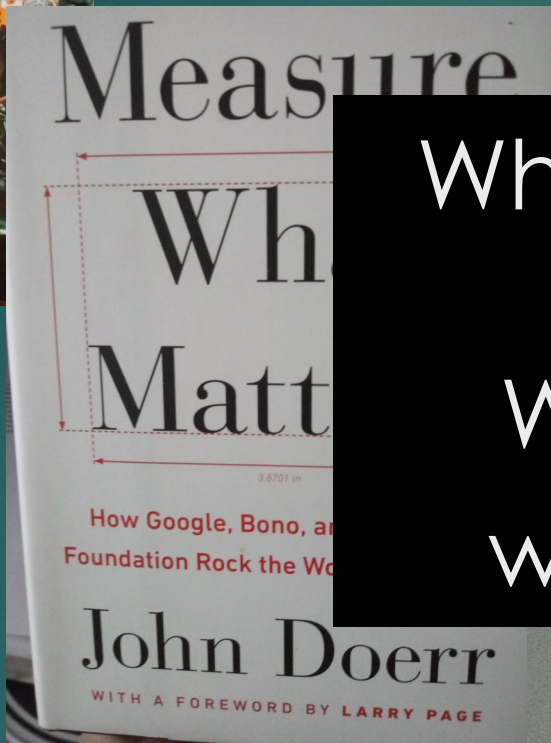
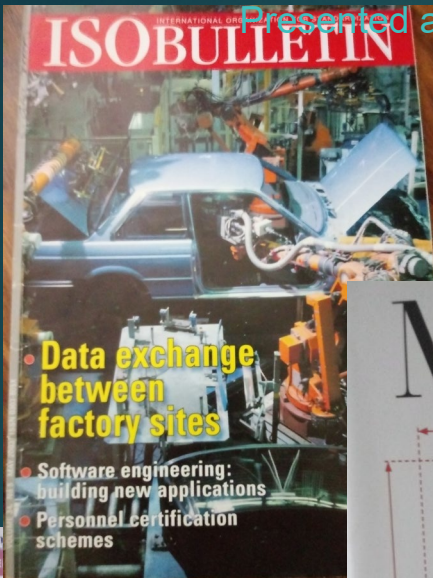
Solution	Total Cost (\$)
2007 Baseline Current State	19,625,641
Opportunities for Improvement	12,412,559

There are significant benefits to be realized by implementing the changes identified in this report.

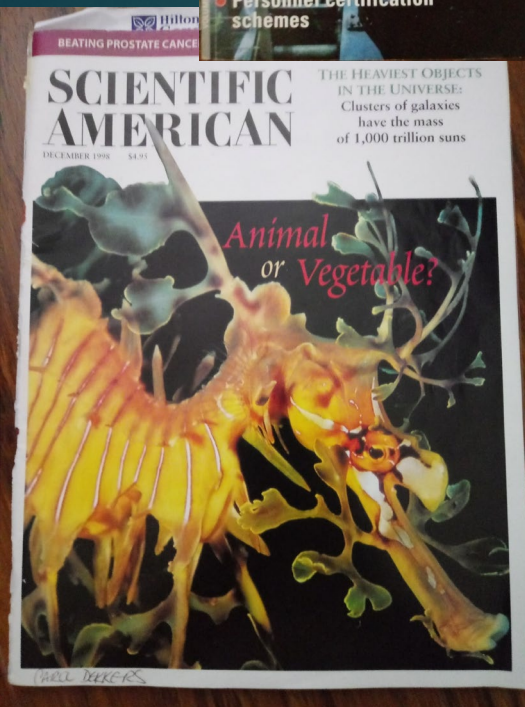
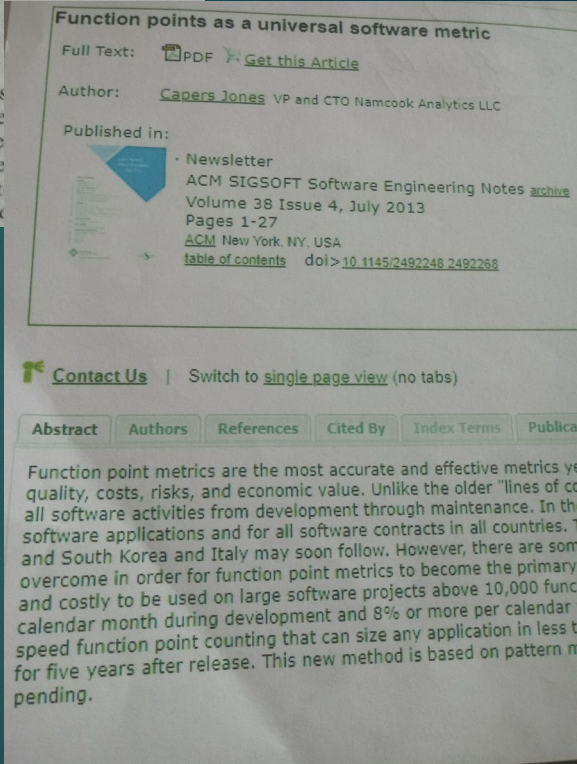
This portfolio of projects could have been completed **3.5 months quicker with a cost saving of \$7.2 million.**

ROI Examples

Organization	Results
Telcordia	Defects 1/10 industry average, customer satisfaction increased from 60-91% over 4 years
Texas Instruments – Systems Group	90% reduction in delivered defects
Thomson CSF	ROI 360%
US Navy	ROI 410%
USAF Ogden Air Logistics Center	ROI 1900%
USAF Oklahoma City Air Logistics Center	ROI 635%
USAF Tinker Air Force Base	ROI 600%



What to measure?
What do EXECs want to know?

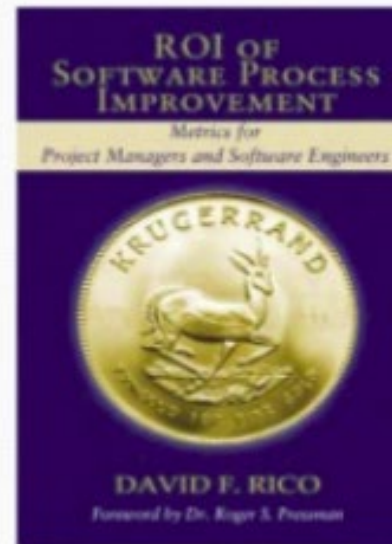
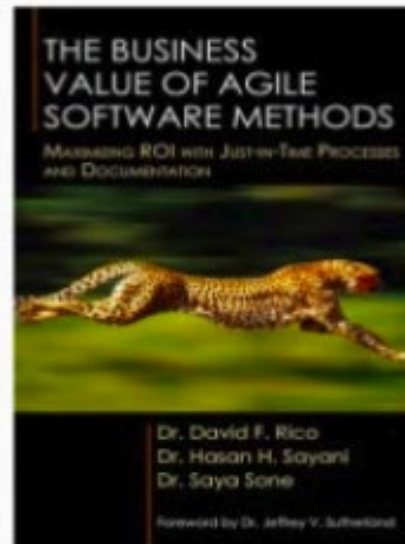


collaboration. It allows people to become more creative in their environment. And with the average user using 4.3 devices at work, you need to embrace an environment that accommodates for the fact that people work in different ways

Dr. David Rico – Business Value of Agile Software Metrics

Agile Methods—ROI Resources

- Guides to software methods for business leaders
- Communicates the business value of IT approaches
- ☞ □ Rosetta stones to unlocking ROI of software methods



Sometimes changing your perspective changes what you see...



Sometimes changing your perspective changes what you see...

Is this cat going



**Proving value (of metrics) takes
planning to create (define),
confirm and convince.**



Edward R. Murrow (1940's)

“The newest computer can merely compound, at speed, the oldest problem in the relations between human beings, & in the end the communicator will be confronted with...

what to say and how to say it.”

Questions?

