

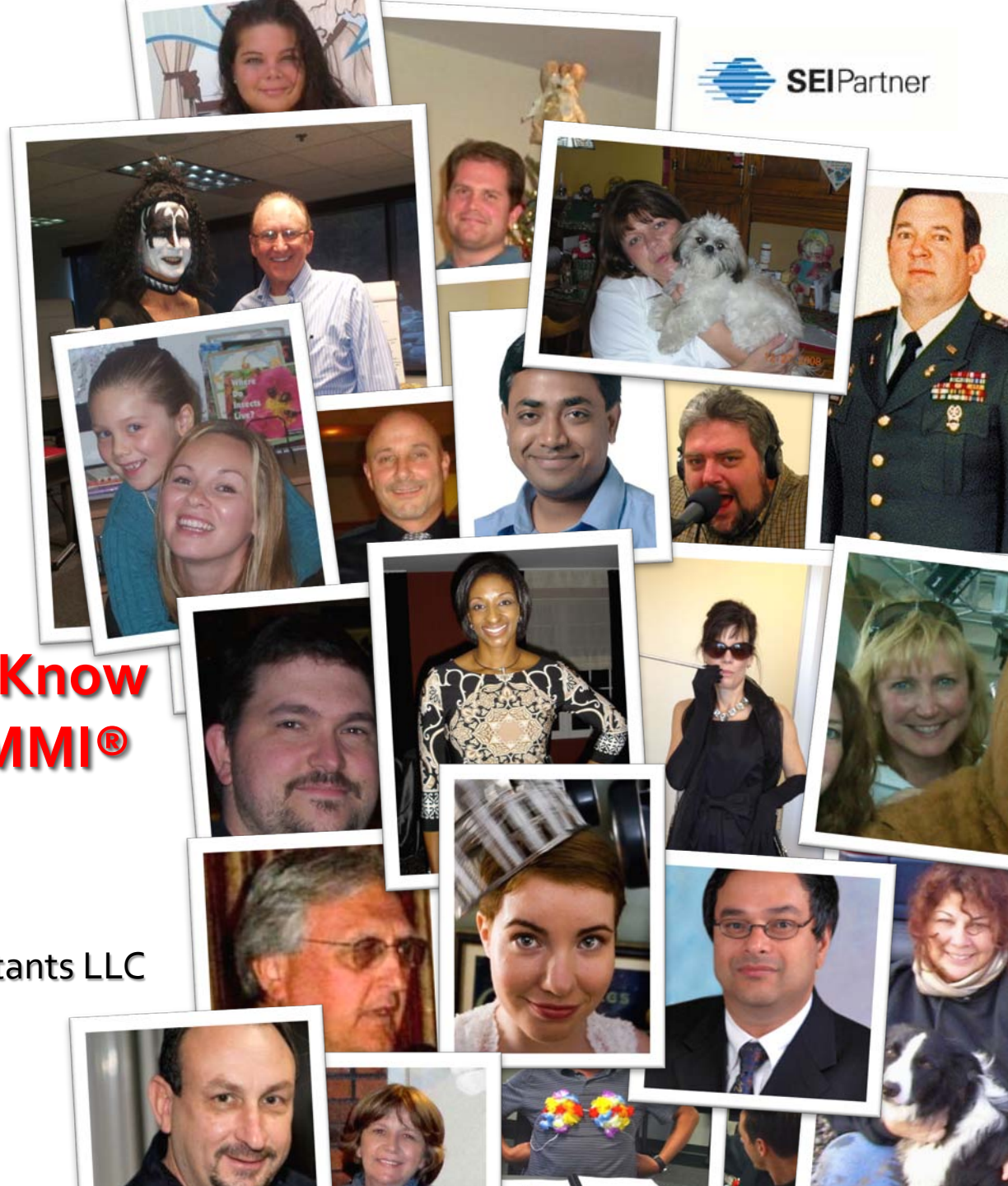
# Questions from the Trenches

**What Over 1000  
Students Want to Know  
Most About the CMMI®**

**Bill Smith CEO**

Leading Edge Process Consultants LLC

[www.CmmiTraining.com](http://www.CmmiTraining.com)



This presentation is being delivered at the **11<sup>th</sup> Annual NDIA CMMI Technology Conference and User Group** in Denver, Colorado, USA, on November 16, 2011. All slides contained herein are **Copyright 2011 by Leading Edge Process Consultants LLC**. Basically, you're not allowed to copy, modify, or otherwise use any of them without our written permission. Please respect the fact that I left our logo and copyright information off the individual slides to make them look a bit cleaner. (Cool, huh?) Plus, the Software Engineering Institute (SEI) would like you to know that **SCAMPI**, **SCAMPI Lead Appraiser**, and **IDEAL** are all service marks of Carnegie Mellon University. Wait, you're still reading this? Good for you! There's more. **CMMI** is registered in the US Patent and Trademark Office by Carnegie Mellon University. Sorry, but **my lawyer made me add all this stuff**, and he only speaks legalese. I promise the rest of your time with me will be a bit more interesting. Thank you for your patience. Bill.

# Ground rules



10:30 –  
11:15



at the  
end



set to  
**stun**

and yes  
I have...



# Flying Monkeys!



Matthew

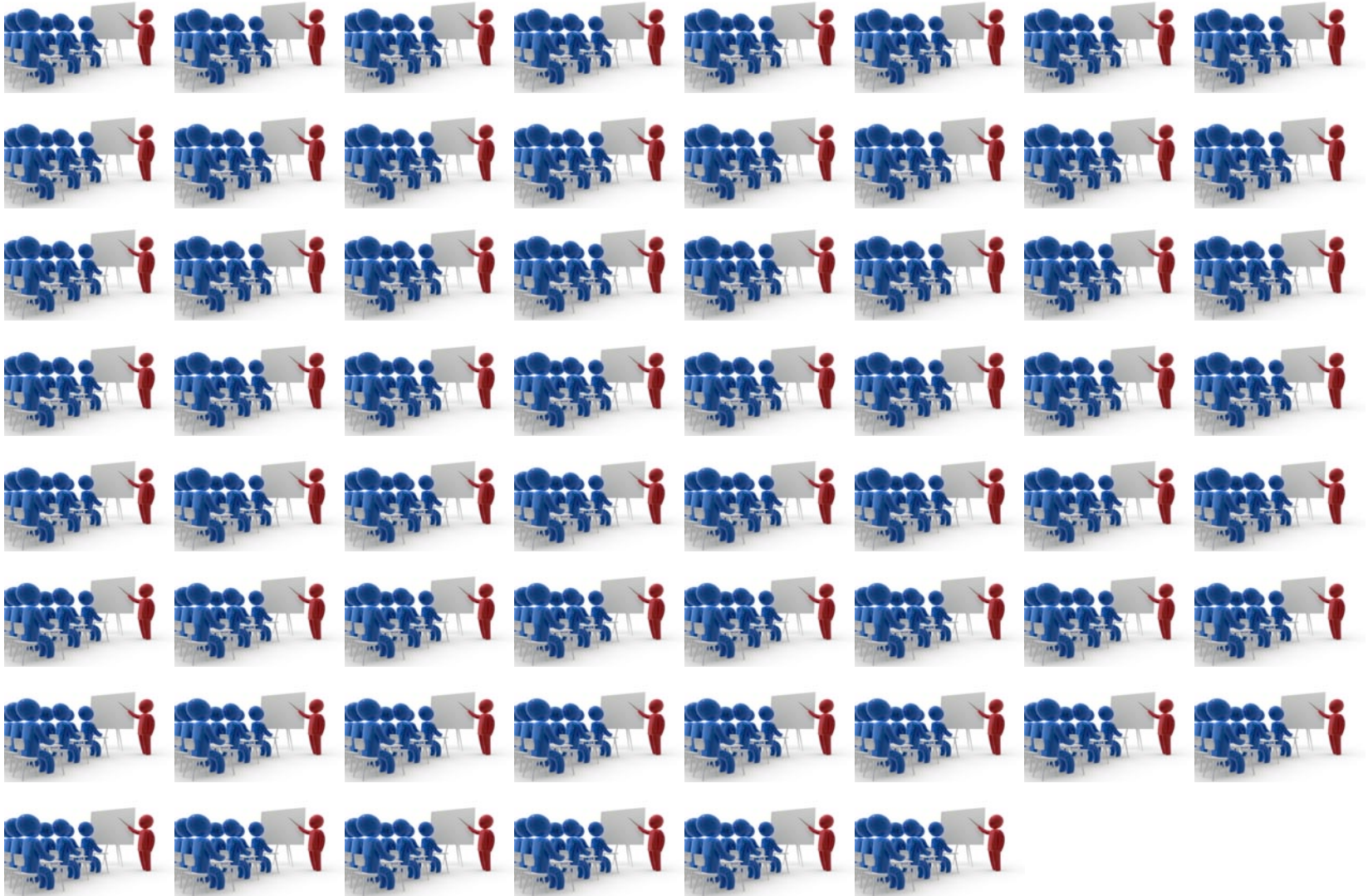
Who am I?



I've taught  
*Intro to CMMI®...*



# 62 times, to 1102 students



# 1102

>

The number  
of hours  
**Lindsay Lohan**  
has spent  
in court!





In class, I've been  
asked 100's of...



Some before  
class even starts...

Does your class  
have a **dress code**?



Obviously  
not.





I'll be presenting  
**a sampling of**  
**those questions**  
with help from...

# Some of my favorite students!

- **Vishal Agarwal**; Project Manager; REI Systems Inc.
- **Bill Altman**; Principal Engineer; SCRA/ATI
- **Dale Bingham**; Director of Quality Management; PSI Pax
- **Susan Carlson**; SVP & Chief Operating Officer; A+ Government Solutions
- **Matthew Carney**; IT Specialist; U.S. Department of Education
- **Judy Engle**, PHR; HR Manager; Tribalco, LLC
- **Gayle Giblin**; Industry Standards Lead; IBM
- **Tim Gollner**; Quality Manager, HES Director; G&B Solutions
- **Ned Gubbi**; Quality Manager, Sunhill Corporation
- **Sharon Howington**; Technical Writer; SMS Data Product Group, Inc.
- **Sandra Kinsey**; PI/QA Engineer; Primus ASRC
- **Erika Kohnke**; Staff Tech, Inc.
- **David Kresheck**; Senior CMMI Specialist; CGI
- **Andy Lisko**; Mgr IT Processes, Quality & Compliance; United Illuminating
- **Mike Mezeul**; Sr. Director, Adva Optical Networking, Inc.
- **Shannon Quinn**; Quality Management Specialist; Delta Solutions and Technologies
- **Felicia Stuckey**; Principal Strategist; Visions Strategic Marketing
- **Will Swann**; Director; Technatomy Corporation
- **Lindsey Swanson**; Society for Human Resource Management
- **Bob Swenson**; Director of Quality; C-Far Services

# From some very cool organizations

- Vishal Agarwal; Project Manager; **REI Systems**
- Bill Altman; Principal Engineer; **SCRA/ATI**
- Dale Bingham; Director of Quality Management; **PSI Pax**
- Susan Carlson; SVP & Chief Operating Officer; **A+ Government Solutions**
- Matthew Carney; IT Specialist; **U.S. Department of Education**
- Judy Engle, PHR; HR Manager; **Tribalco, LLC**
- Gayle Giblin; Industry Standards Lead; **IBM**
- Tim Gollner; Quality Manager, HES Director; **G&B Solutions**
- Ned Gubbi; Quality Manager, **Sunhillo Corporation**
- Sharon Howington; Technical Writer; **SMS Data Product Group, Inc.**
- Sandra Kinsey; PI/QA Engineer; **Primus ASRC**
- Erika Kohnke; **Staff Tech, Inc.**
- David Kresheck; Senior CMMI Specialist; **CGI**
- Andy Lisko; Mgr IT Processes, Quality & Compliance; **United Illuminating**
- Mike Mezeul; Sr. Director, **Adva Optical Networking, Inc.**
- Shannon Quinn; Quality Management Specialist; **Delta Solutions and Technologies**
- Felicia Stuckey; Principal Strategist; **Visions Strategic Marketing**
- Will Swann; Director; **Technatomy Corporation**
- Lindsey Swanson; **Society for Human Resource Management**
- Bob Swenson; Director of Quality; **C-Far Services**

who've given  
me...





# A mild disclaimer

In this presentation, I'll  
associate each student with a  
question that I've actually been  
asked in class. In most cases,  
**that specific student did not  
ask that specific question...**

except for  
Susan...

I have an **important meeting** on Thursday.  
Is it okay if I miss part  
of class?



Susan

No problem.

I'll just give you a  
**make-up**  
assignment



I have a brand new SUV...



...that could really use a nice hand-waxing!

**Let's get started**

Why do you think  
**requirements** are so  
hard to get right?



So many reasons!  
Here's one: the English  
language...



...and write  
**"Happy Birthday"**  
on the sides.



If you can mess up  
the requirements for  
**what to write on**  
**a birthday cake**

is it any wonder  
we can have problems with

...harder things?





Speaking of  
requirements, why is  
**REQM at ML2**, when  
RD is at ML3?



David



I wasn't at that  
meeting, but...

When considering the PAs that are at

**ML2 vs. ML3**

don't think

***What comes first in the life cycle.***

Think

***Level of risk to a project.***

**Scope creep is a major risk.**

# Scope creep: a quick example

Can you  
take out the  
**trash**, hun?



Sure, no  
problem!

The next morning...

Did you take  
out the  
recycling?



**Scope  
creep!**



So, wouldn't  
the best  
**validation**  
environment  
always be the  
**operational**  
environment?



Bob

No.

Say you're  
developing  
**ruggedized**  
**equipment**  
that must...





survive high temperatures...



...and sandstorms



You could  
just...

**find a convenient desert...**

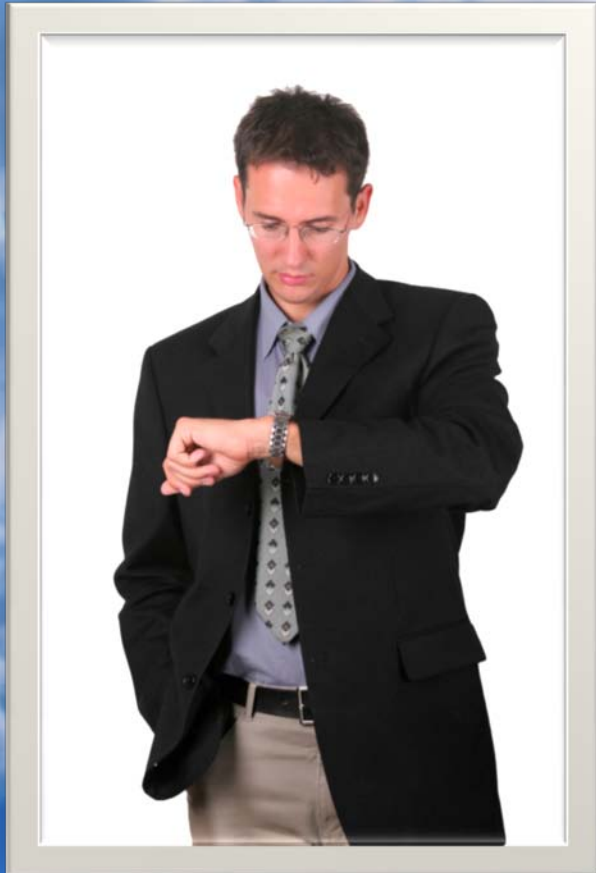


sit there...





and wait...



for days... weeks...  
months...



for your target temperature...



And when that  
**special day arrives**  
and it's

**finally 130 degrees**

and your equipment works

and you're ready to leave

and you

**showered for the first time in 60 days,**

you realize

**you can't go home**

because...





**You still need  
a freakin'  
sandstorm!**

Or you could  
just...

stick the equipment  
in an **oven**...



...and throw **sand** at it

(An oversimplification, of course. But you get the point.)

The  
**operational environment**  
may not provide you with all the  
**environmental  
characteristics**  
you want to test, in a  
**reasonable timeframe**  
at a  
**practical cost.**

I'm a DJ. One of my buddies attended your class and said you applied DAR to **selecting music**. Really?



Glad you asked...



# A jukebox for the basement!

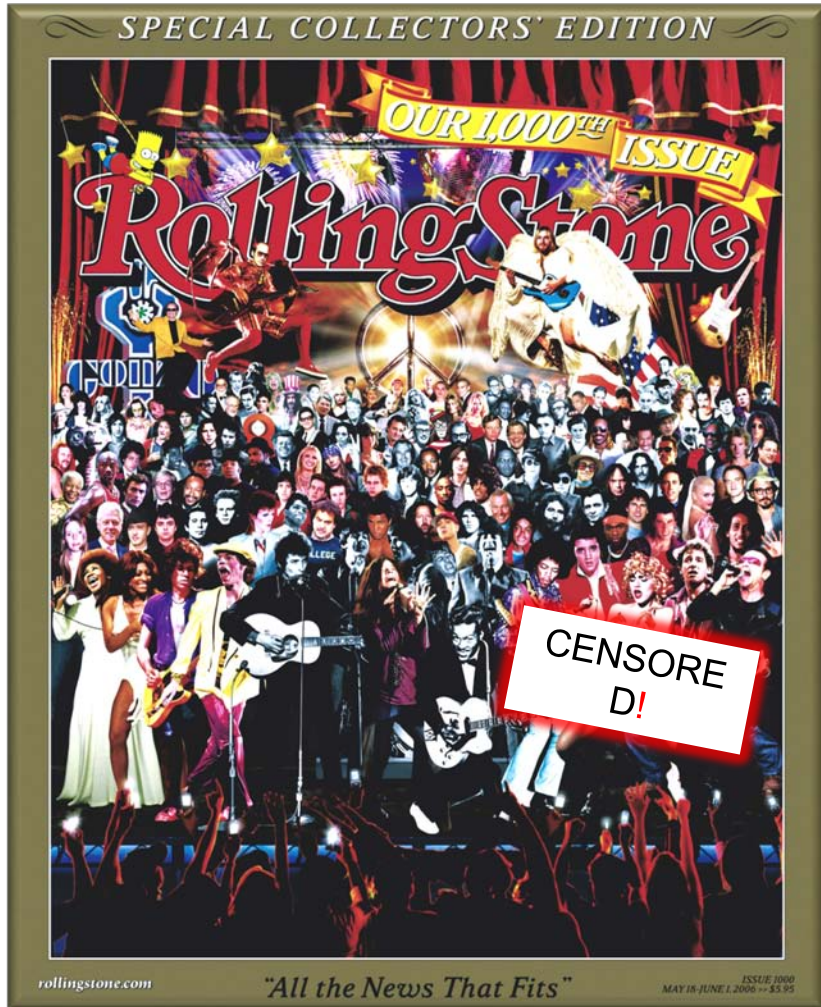
The situation:

- I targeted a retro-style, CD-playing **jukebox** for my basement
- The **capacity** is 100 CDs
- 50 CDs will be dedicated to **classic rock** artists – one CD of each artist's best songs

*Which **50 artists** should have a CD in my jukebox?*



# Identify candidate artists



I searched through lists for potential artists:

- Rock & Roll **Hall of Fame** inductees
- **Rolling Stone** Magazine
  - “100 Greatest Artists”
  - Cover of 1000<sup>th</sup> issue



# Determine the evaluation criteria

## Critical Acclaim

## Popularity

## My Taste

I decided:

which **criteria**  
were important

how **important**  
each was

how I'd  
**measure** each



- Rolling Stone Magazine ranking
- Rock & Roll HOF?
- Cover of Rolling Stone #1000?



- Billboard magazine singles ranking
- RIAA\* album sales



- #of 5-star songs



## Establish the evaluation method

I decided how to combine all this information...

**DAR**  
**SP 1.4**  
**Select Evaluation Methods**

**DAR**  
**SP 1.4**  
**Select Evaluation Methods**

**DAR**  
**SP 1.4**  
**Select Evaluation Methods**

[illegible]

...including the formulas that I'd use to derive each artist's final rating

# Perform the evaluation



I ended up with a sorted list of over 200 artists.

**DAR**

**SP 1.5**

Evaluate  
Alternative  
Solutions

SP 1.5

Evaluate Alternative Solutions

Artist	Critical Acclaim				Popularity			My Taste		Total (0 to 1)
	30%				30%			40%		
	Rock and Roll Hall of Fame? (Thru 2006)	Cover of Rolling Stone Magazine #1000? (5/18/06)	Rolling Stone Magazine Ranking (4/15/04, 4/21/05)	Points (0 to 1)	Billboard Magazine Singles Ranking (Thru 12/27/03)	RIAA Album Sales (Millions, Thru 7/31/06)	Points (0 to 1)	Number of 5-Star Songs (My Ratings, 20 Max)	Points (0 to 1)	
The Beatles	•	•	1	1.00	2	169.5	1.00	20	1.00	1.00
Elvis Presley	•	•	3	.97	1	118.5	0.88	20	1.00	0.95
The Rolling Stones	•	•	4	.95	9	65.5	0.69	20	1.00	0.89
Led Zeppelin	•	•	14	.81		109.5	0.60	20	1.00	0.82
Bob Dylan	•	•	2	.98		36.0	0.35	20	1.00	0.80
The Beach Boys	•	•	12	.83	20	21.5	0.45	20	1.00	0.78
Stevie Wonder	•	•	15	.79	5	19.5	0.49	20	1.00	0.78
Michael Jackson	•	•	35	.55	6	60.5	0.68	20	1.00	0.77
Bruce Springsteen	•	•	23	.69	87	62.5	0.51	20	1.00	0.76
Prince	•	•	28	.63	21	39.5	0.54	20	1.00	0.75

Here are the Top 10.



# My top 50 rock 'n roll artists

#	Artist	Pts.	#	Artist	Pts.	#	Artist	Pts.
1	The Beatles	1.00	18	Eric Clapton	0.64	35	CCR	0.51
2	Elvis Presley	0.95	19	Neil Young	0.64	36	Van Halen	0.50
3	The Rolling Stones	0.89	20	Aerosmith	0.64	37	Chuck Berry	0.49
4	Led Zeppelin	0.82	21	Rod Stewart	0.62	38	Bob Marley	0.49
5	Bob Dylan	0.80	22	Fleetwood Mac	0.60	39	Steely Dan	0.49
6	The Beach Boys	0.78	23	The Ramones	0.60	40	Simon & Garfunkel	0.48
7	Stevie Wonder	0.78	24	Jimi Hendrix	0.59	41	Sam Cooke	0.47
8	Michael Jackson	0.77	25	The Clash	0.58	42	The Temptations	0.46
9	Bruce Springsteen	0.76	26	Pink Floyd	0.58	43	Blondie	0.46
10	Prince	0.75	27	Marvin Gaye	0.57	44	Ray Charles	0.44
11	Elton John	0.74	28	The Police	0.57	45	AC/DC	0.43
12	Madonna	0.74	29	Bob Seger	0.56	46	The Supremes	0.43
13	U2	0.73	30	David Bowie	0.55	47	Queen	
14	The Who	0.66	31	Tom Petty	0.55	48	Eminem	
15	Billy Joel	0.66	32	The Doors	0.53	49	Boston	
16	The Eagles	0.66	33	John Mellencamp	0.52	50	Paul Simon	
17	Johnny Cash	0.66	34	Journey	0.52			

**DAR**

**SP 1.6**

Select  
Solutions

# My top 50 rock 'n roll artists

#	Artist	Pts.	#	Artist	Pts.
1	Eric Clapton	0.51	31	Neil Young	0.50
2	Aerosmith	0.49	32	Rod Stewart	0.49
3	Fleetwood	0.49	33	The Jimi Hendrix Experience	0.49
4	The Who	0.48	34	Barbra Streisand	0.48
5	Jim Morrison	0.47	35	The Beatles	0.47
6	The Rolling Stones	0.46	36	Pink Floyd	0.46
7	Marvin Gaye	0.46	37	Madonna	0.46
8	John Lennon	0.44	38	Michael Jackson	0.44
9	David Byrne	0.43	39	Stevie Nicks	0.43
10	George Harrison	0.43	40	Donna Summer	0.43
11	Bob Dylan	0.43	41	Janet Jackson	0.43
12	Paul McCartney	0.43	42	Cher	0.43
13	Elton John	0.43	43	Olivia Newton-John	0.43
14	Lynyrd Skynyrd	0.43	44	Barbra Streisand	0.43
15	The Allman Brothers Band	0.43	45	Barbra Streisand	0.43
16	Grateful Dead	0.66	46	Barbra Streisand	0.43
17	Johnny Cash	0.66	47	Barbra Streisand	0.43
18	Bob Dylan	0.66	48	Barbra Streisand	0.43
19	Bob Dylan	0.66	49	Barbra Streisand	0.43
20	Bob Dylan	0.66	50	Barbra Streisand	0.43
21	Bob Dylan	0.66	51	Barbra Streisand	0.43
22	Bob Dylan	0.66	52	Barbra Streisand	0.43
23	Bob Dylan	0.66	53	Barbra Streisand	0.43
24	Bob Dylan	0.66	54	Barbra Streisand	0.43
25	Bob Dylan	0.66	55	Barbra Streisand	0.43
26	Bob Dylan	0.66	56	Barbra Streisand	0.43
27	Bob Dylan	0.66	57	Barbra Streisand	0.43
28	Bob Dylan	0.66	58	Barbra Streisand	0.43
29	Bob Dylan	0.66	59	Barbra Streisand	0.43
30	Bob Dylan	0.66	60	Barbra Streisand	0.43
31	Bob Dylan	0.66	61	Barbra Streisand	0.43
32	Bob Dylan	0.66	62	Barbra Streisand	0.43
33	Bob Dylan	0.66	63	Barbra Streisand	0.43
34	Journey	0.52	64	Barbra Streisand	0.43

## CHANGE REQUEST

### Originator

CMMI Student

### Description of Proposed Change

Eminem!?

How about Metallica instead?

### Rationale

Metallica rocks!

### Disposition



## CHANGE REQUEST

### Originator

Mrs. K. Smith

### Description of Proposed Change

Please add Barbra Streisand.

### Rationale

It's my basement, too.

### Disposition



Per 2001 agreement

DAR

SP 1.6

Select  
Solutions

Can you do a quick  
walkthrough of the  
**engineering PAs**  
again?



Tim

No problem, Tim.

The following slides use  
graphics

I've adapted from

**“How Projects Really Work”**

available at

**[www.projectcartoon.com](http://www.projectcartoon.com)**

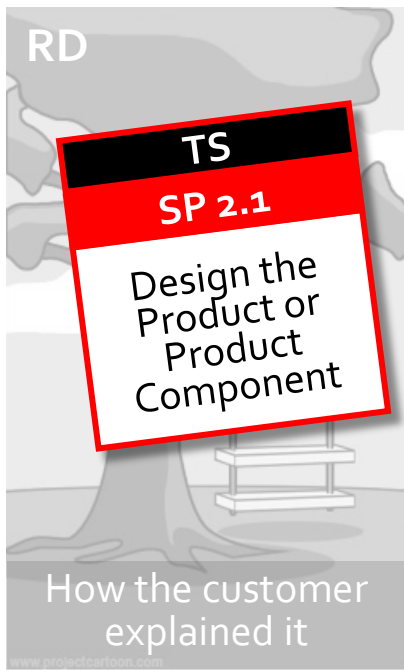


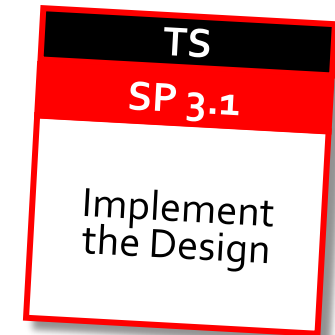
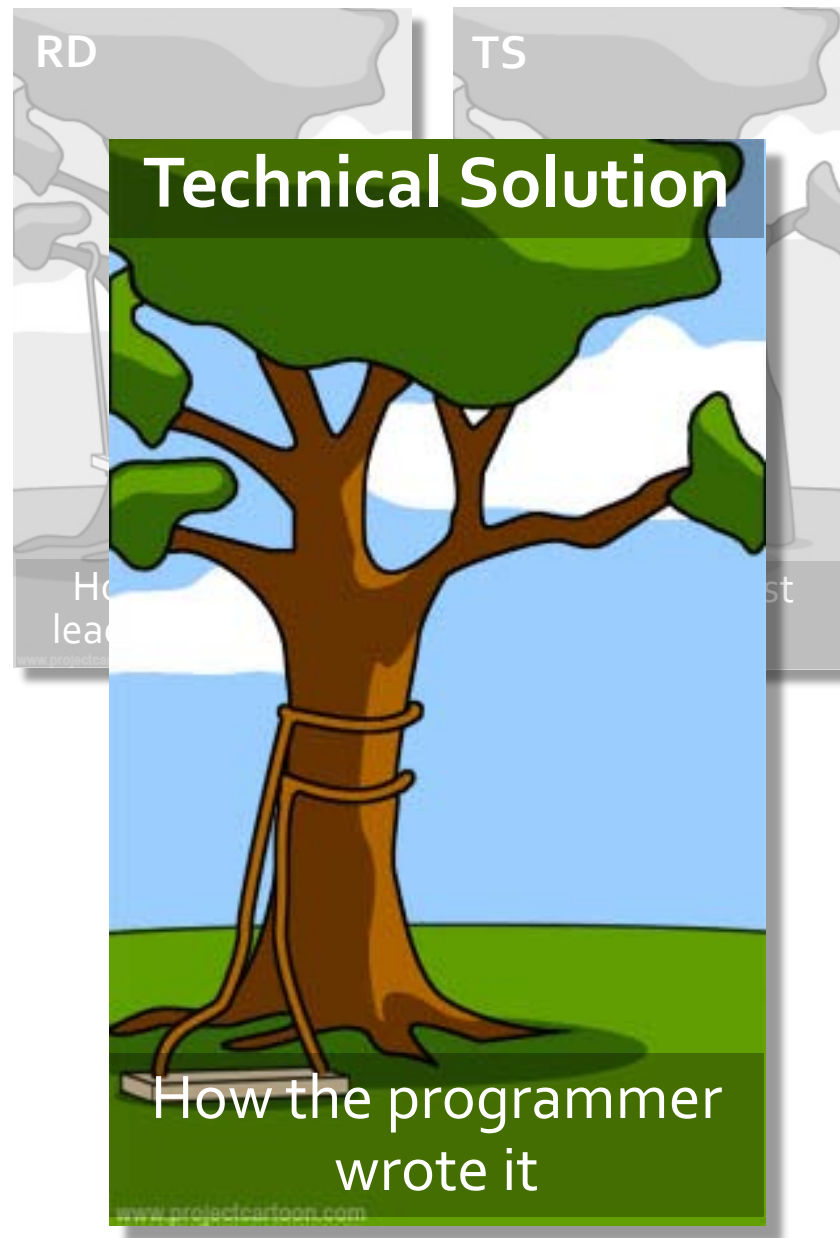


What the customer  
really needed

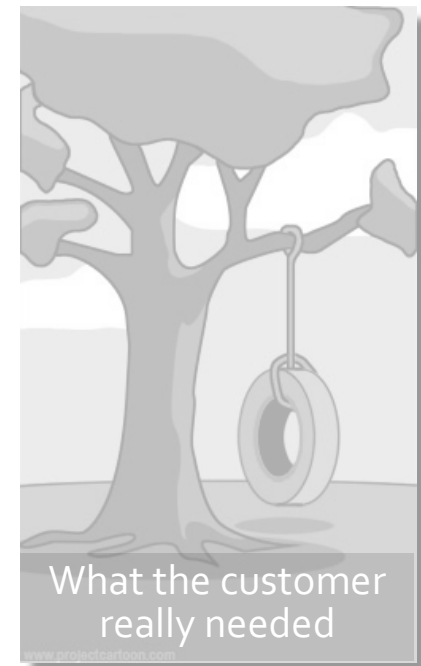
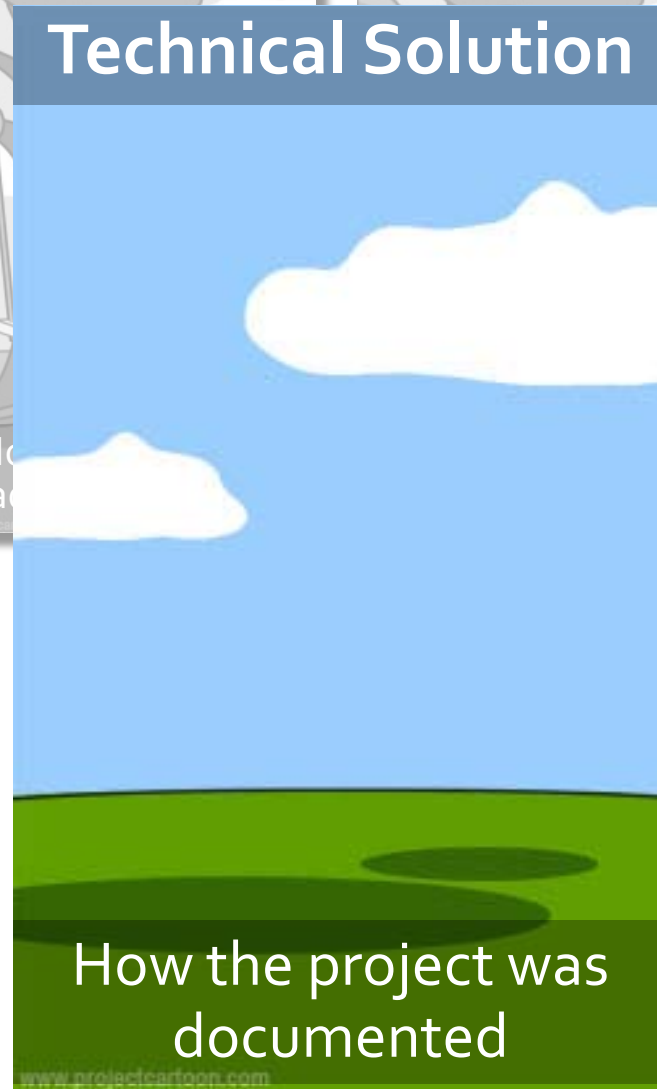
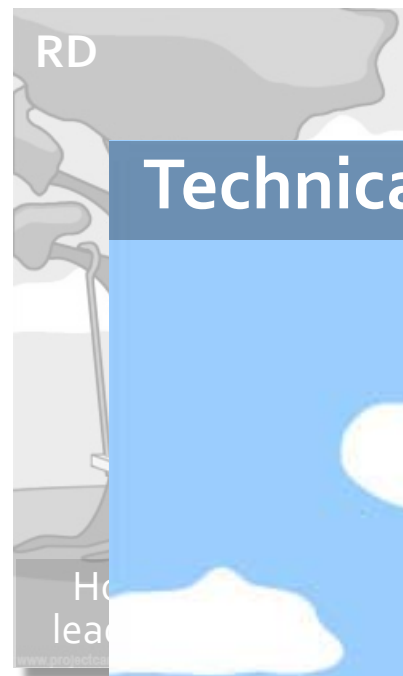


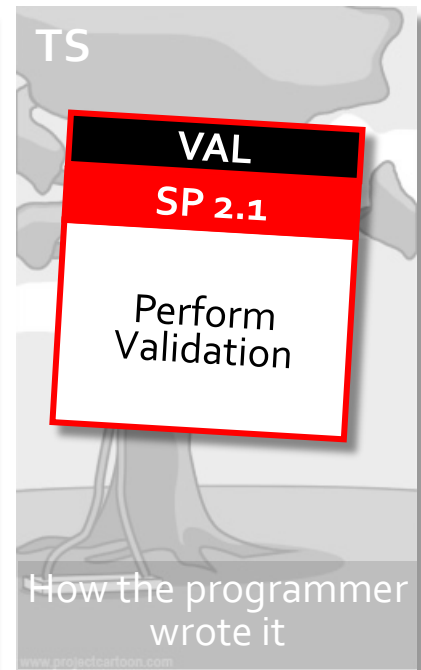
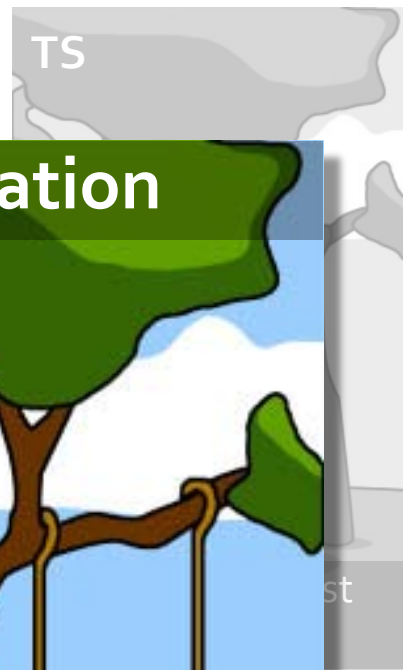
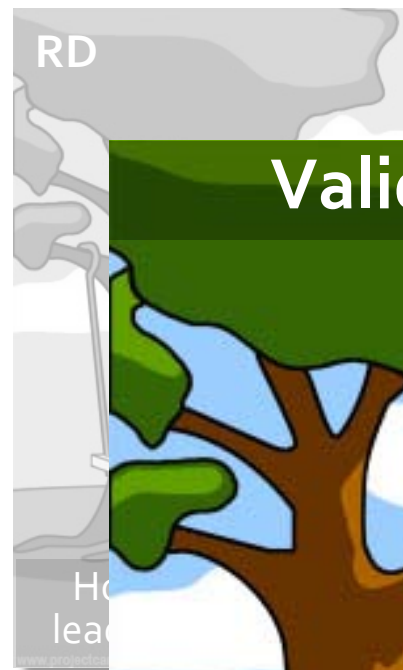












RD

PI

SP 3.4

Package and  
Deliver the  
Product or  
Product  
Component

How the customer  
explained it

[www.projectcartoon.com](http://www.projectcartoon.com)

RD

TS

TS

# Product Integration

What operations  
installed

[www.projectcartoon.com](http://www.projectcartoon.com)

VAL

TS

How the project  
was documented

[www.projectcartoon.com](http://www.projectcartoon.com)

How it performed  
under stress

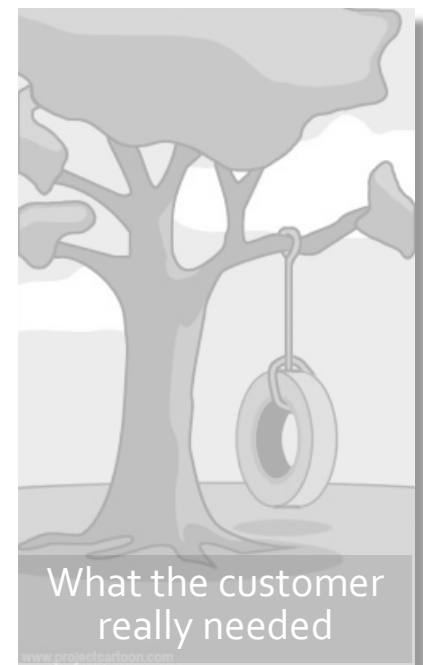
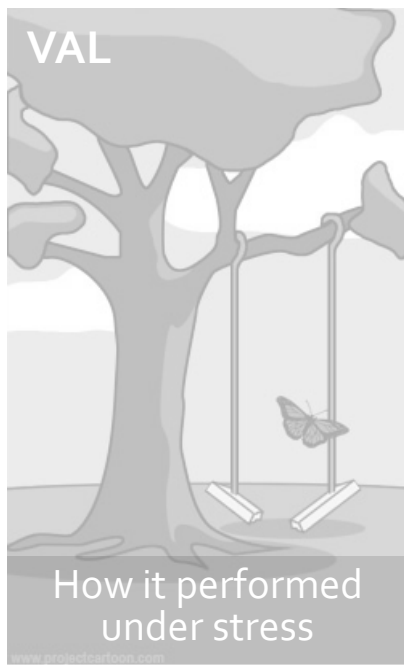
[www.projectcartoon.com](http://www.projectcartoon.com)

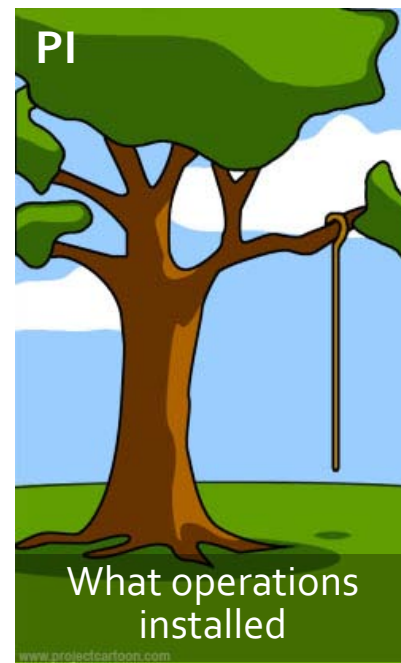
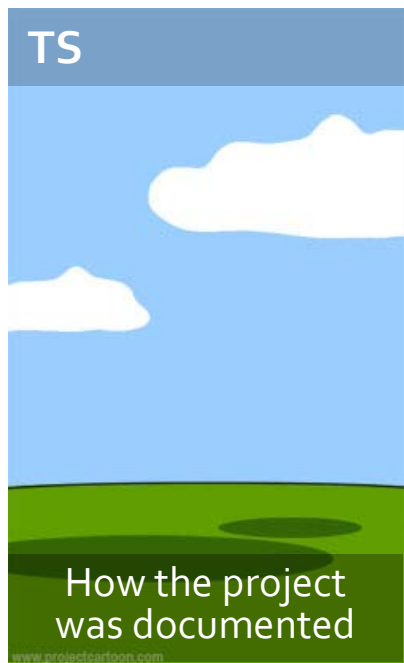
How the programmer  
wrote it

[www.projectcartoon.com](http://www.projectcartoon.com)

What the customer  
really needed

[www.projectcartoon.com](http://www.projectcartoon.com)



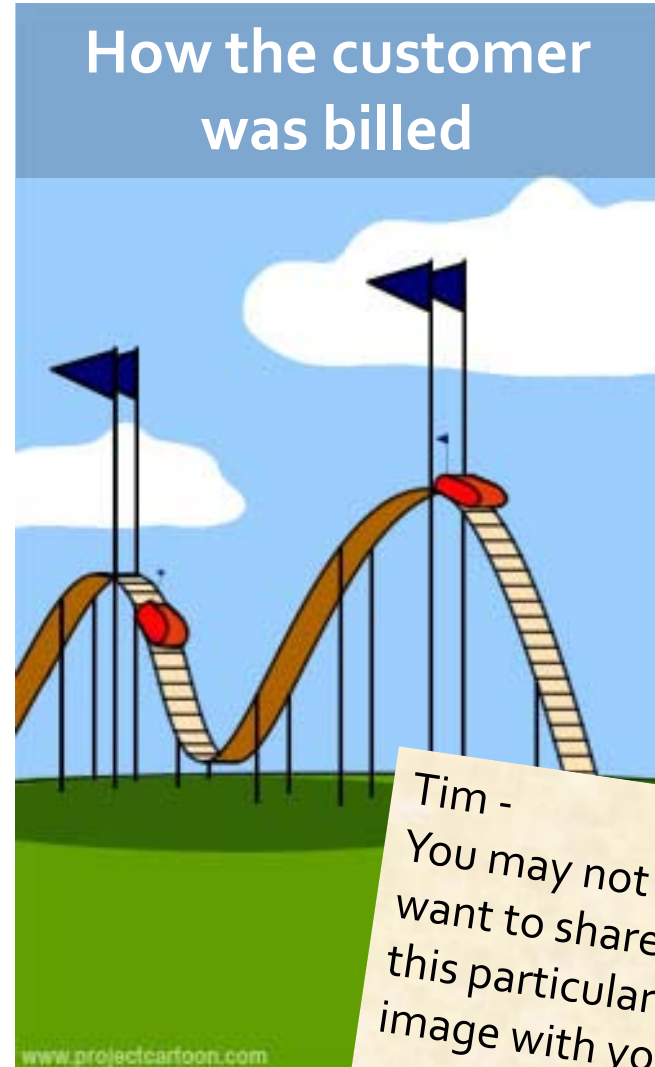




## What marketing advertised



## How the customer was billed



Tim -  
You may not  
want to share  
this particular  
image with your  
customers.

- Bill

You said **institutionalization** is  
when you can say “that’s the  
way we do things around here.”  
Is that always *good*, though?



Lindsey

Excellent point, Lindsey!  
Not always...

When you  
**institutionalize**  
processes,  
they become  
organizational  
**habits.**

Habits can be good...





...or bad



You can  
use the CMMI® to  
**create processes**  
that are  
**repeatably...**

Stupid!



**Just say no!**

to bad processes

Check  
out...



# My 2010 NDIA CMMI® Conference Presentation

**Leading Edge**  
PROCESS CONSULTANTS LLC

10<sup>th</sup> Annual National Defense Industrial Association  
CMMI® Technology Conference and User Group  
November 16, 2010  
Denver, Colorado, USA  
Track 1: CMMI and Process Improvement  
Session 11315, Chasm Creek 2-15-3:00 pm

WHAT DOESN'T KILL YOU MAKES YOU STRONGER:  
**MY PROCESS IMPROVEMENT  
LESSONS LEARNED**  
VERSION 1.0A (LARGE FORMAT) - 10/25/2010

Bill Smith, CEO  
Leading Edge Process Consultants LLC  
[www.CmmiTraining.com](http://www.CmmiTraining.com)

5. **Walk** Before You  
4. Avoid a **One-Size**  
Improvement Ap  
3. If People Aren't F  
Your Process, As  
2. Involve the **Right**  
1. Make Process Im  
a **Project**

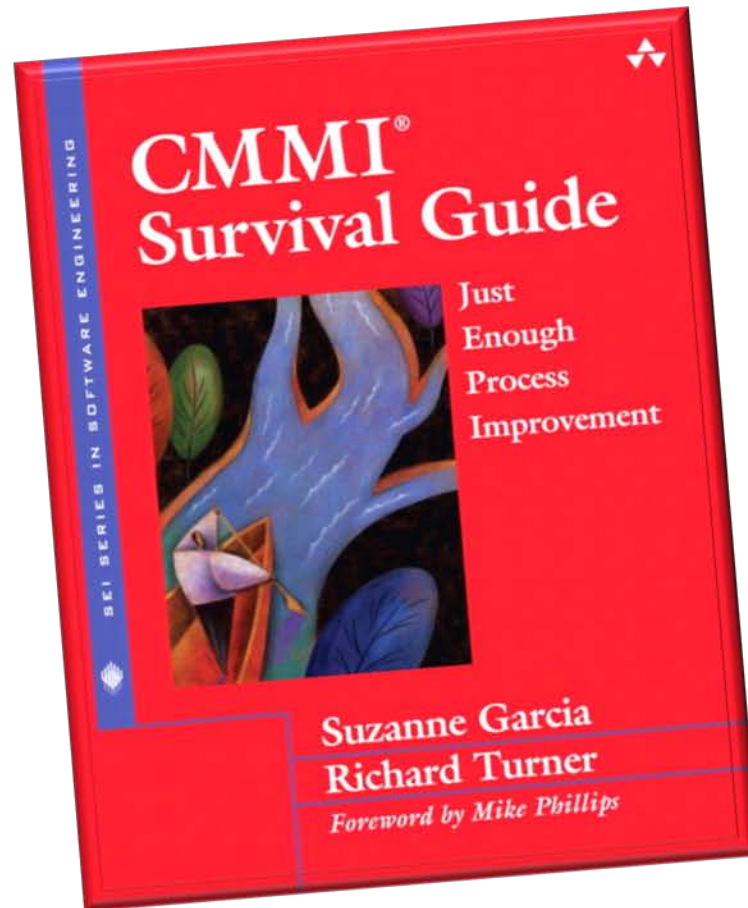
10. Don't Ignore the **Nays**  
Be Right  
9. You May **Lose People**  
Okay  
8. "And Then a Miracle  
a **Deployment Plan**  
7. **Process Improvement**  
**Compliance** Are Not S  
6. Keep an **Open Mind**

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Or one of  
the many  
books  
written  
by...



...people  
much  
smarter  
than me!


Could you say a  
little more about  
the different types  
of **appraisals**?



This is not a class on appraisals, and I'm not a Lead Appraiser. But since we have a few extra minutes...

# SCAMPI

## Fun



The next four slides are based  
on quotes from *CMMI SCAMPI*  
*Distilled: Appraisals for*  
*Process Improvement*. Ahern  
et al, Addison-Wesley, 2005.





## Fat-Free SCAMPI

an appraisal  
in which the  
**objective**  
**evidence**  
presented  
to the team  
is **very thin**





# All-You-Can-Eat SCAMPI

an  
appraisal in  
which the team  
is swamped with  
objective evidence for  
**every model subpractice**



# Chicken SCAMPI



an appraisal whose lead appraiser comes from within the **company being appraised**

# Sushi SCAMPI

an appraisal whose results seem **fishy**





What are some  
characteristics of a  
**maturity level 1**  
organization?





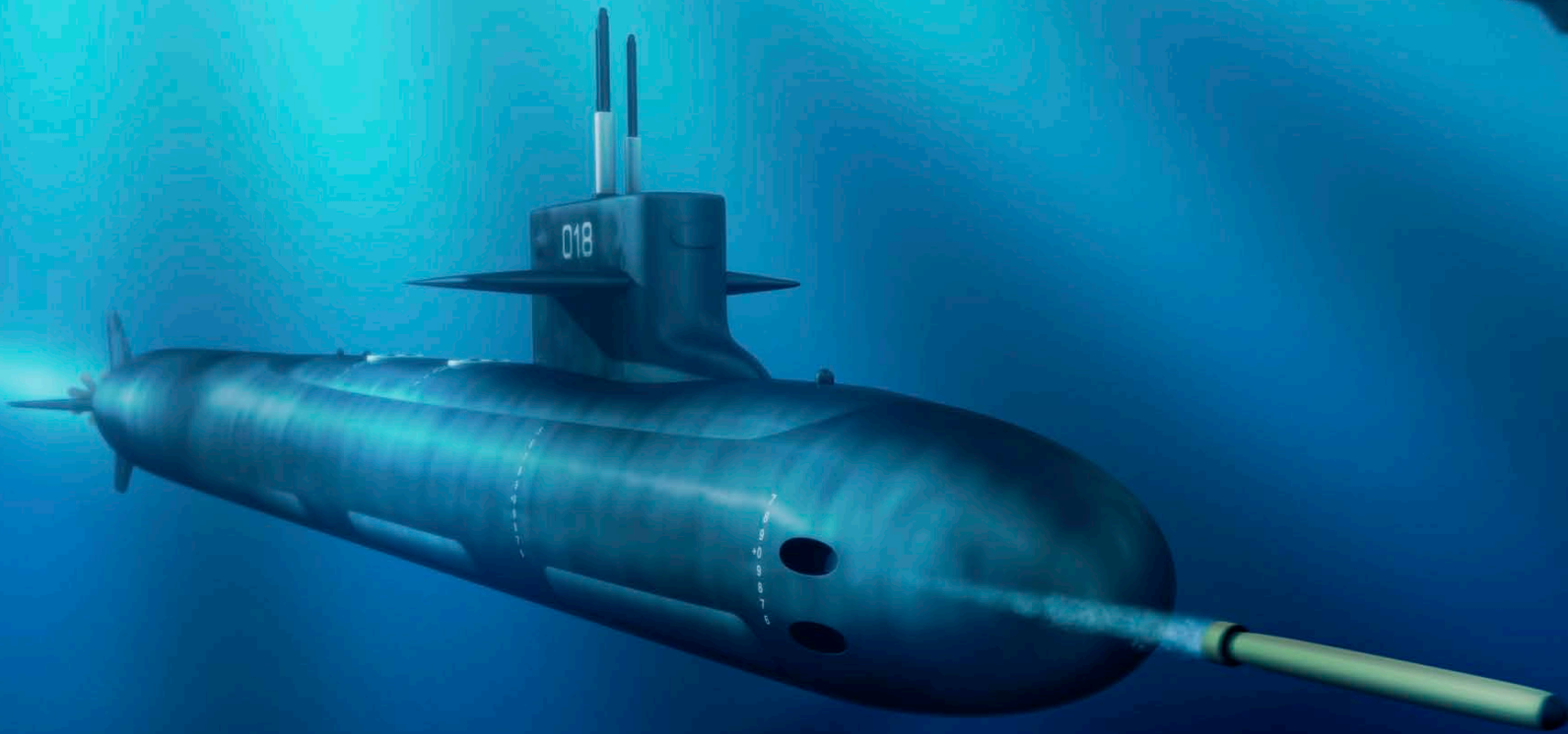
I thought you'd never ask.

Thanks, Dale,  
for setting up...



**The grand finale!**

*You Know You're ML 1 When:*



You think a **subpractice**  
is a **test run** for an **underwater boat**.



## You Know You're ML 1 When:

You believe an  
**operational**  
**scenario**  
involves an ill-  
fitting gown that  
ties in the rear

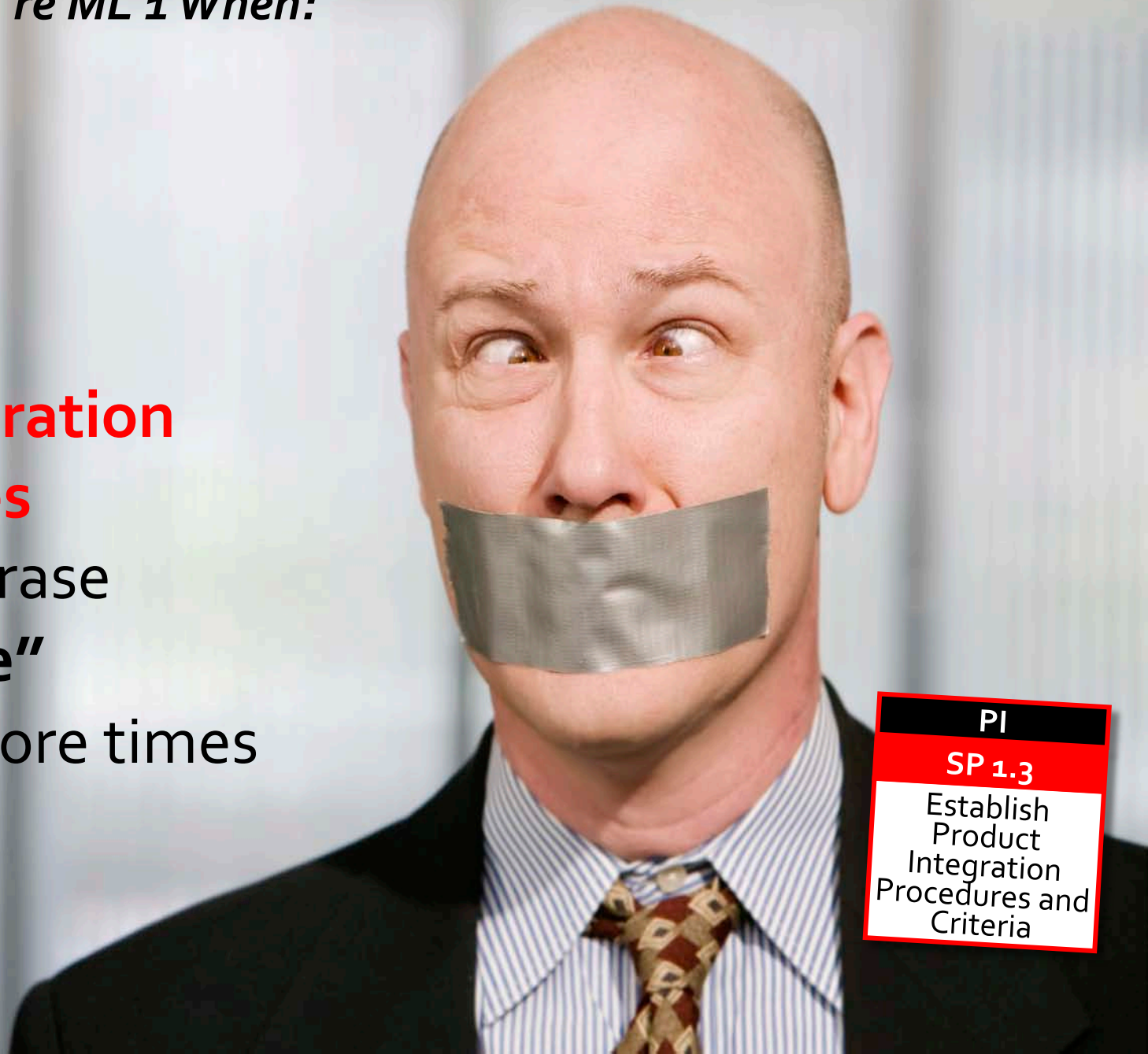
RD

SP 3.1

Establish  
Operational  
Concepts and  
Scenarios

*You Know You're ML 1 When:*

Your **integration  
procedures**  
use the phrase  
“**duct tape**”  
three or more times



PI

SP 1.3

Establish  
Product  
Integration  
Procedures and  
Criteria



*You Know You're ML 1 When:*

Your primary  
**causal analysis**  
tool is the  
**Blame Allocation  
Matrix.**

CAR

SP 1.2

Analyze  
Causes



# *You Know You're ML 1 When:*

DAR

SP 1.4

Select  
Evaluation  
Methods

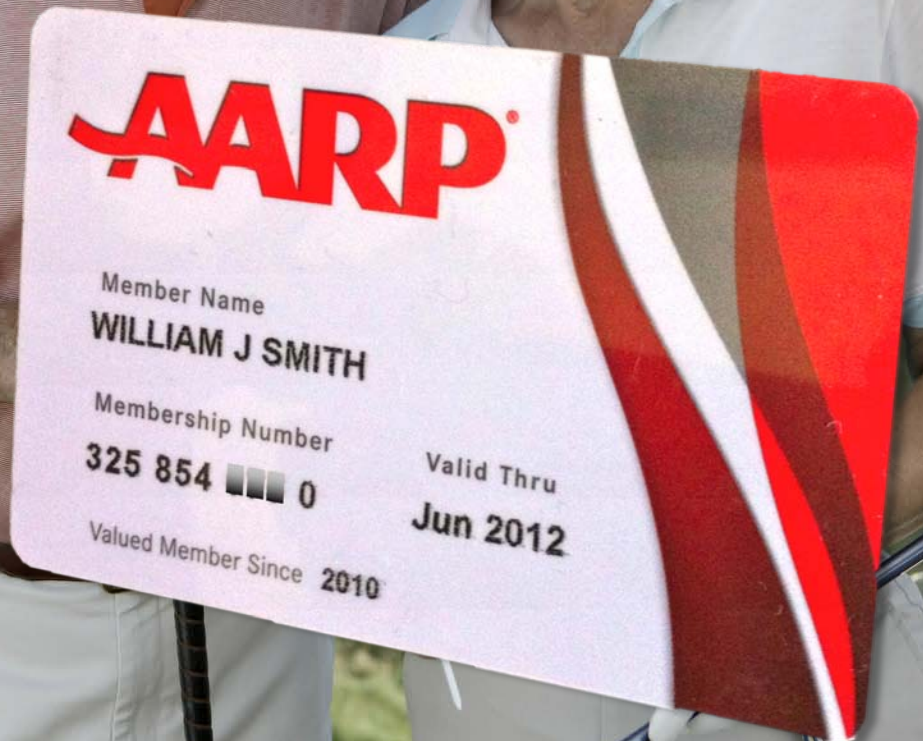


Your formal **decision making** process typically involves a chimpanzee, a dartboard, and a six-pack of beer.



*You Know You're ML 1 When:*

You think a  
**maturity level**  
is something  
you attain  
when you're  
old enough to  
join the **AARP**



# The End

(kinda)

# Join me again *right here* at 2:15!



**Leading Edge**  
PROCESS CONSULTANTS

SEI Partner

## Why Project Managers (Understandably) Hate the CMMI\*

**CMMI-DEV, VERSION 1.3**

### CMMI<sup>®</sup> for Development

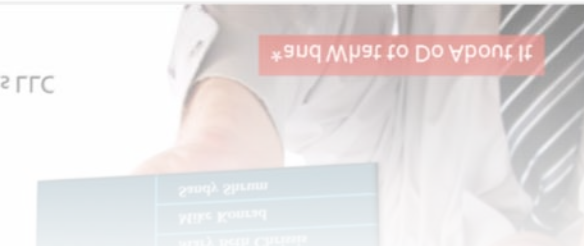
Guidelines for Process Integration and Product Improvement

THIRD EDITION

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\*and What to Do About It



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**THE CMMI\***



## Rock'n CMMI Training



Bill Smith

## ...and Appraisals!



Mary Segnit

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**or**





Kate



Kim



## Rock'n CMMI Training



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