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# Special Intelligence from the Women In Black

**Cora Carmody, SAIC**

**Representing also**

**Kim Caputo, Delta Business Solutions**

**Beth Gramoy, Master Systems Inc., US Navy RET.**

**Joan Weszka, Lockheed Martin**

**Rose Whitney, Process Focus Management, Inc.**

## **European SEPG 2005**

### **London**

### **13 June 2005**



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# Agenda



- **15 min. Introduction**
- **45 min. Sell & Enlighten**
- **30 min. Communicate Expectations Often**
- **30 min. Break**
- **45 min. Rejuvenate & Encourage**
- **30 min. Tailor Things to Fit New Situations**
- **15 min. Questions**

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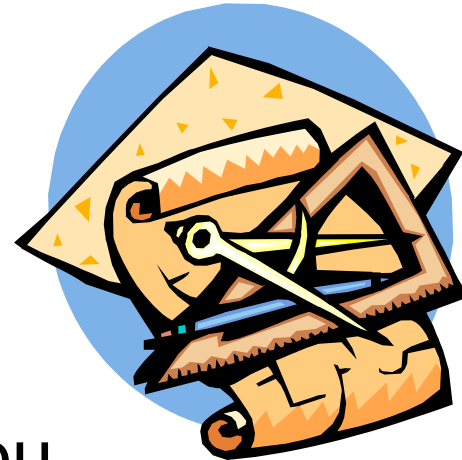
# Introduction

- What's the Secret to...
  - Achieving the SPI Mission
  - Getting past “The Wall”
  - Obtaining (and Retaining) Sponsorship
  - Being heard

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# Models and Maps

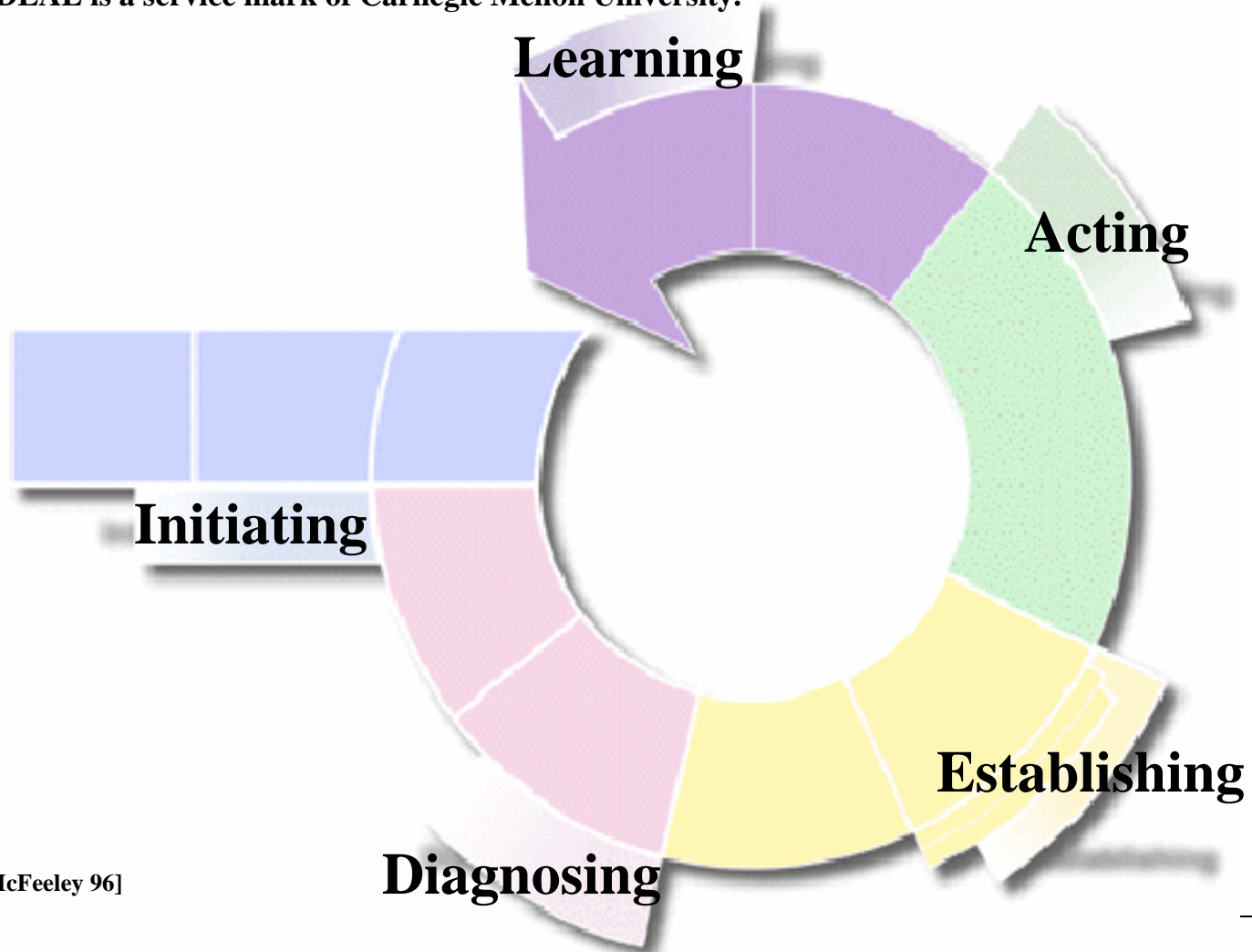
- The IDEAL Model tells you what your mission is...  
...but it's not that easy
- The NORMAL Model shows you how things get off track
- The SECRET Map shows you how to get back on track to success



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# The IDEAL<sup>SM</sup> Model

<sup>SM</sup> IDEAL is a service mark of Carnegie Mellon University.



[McFeeley 96]

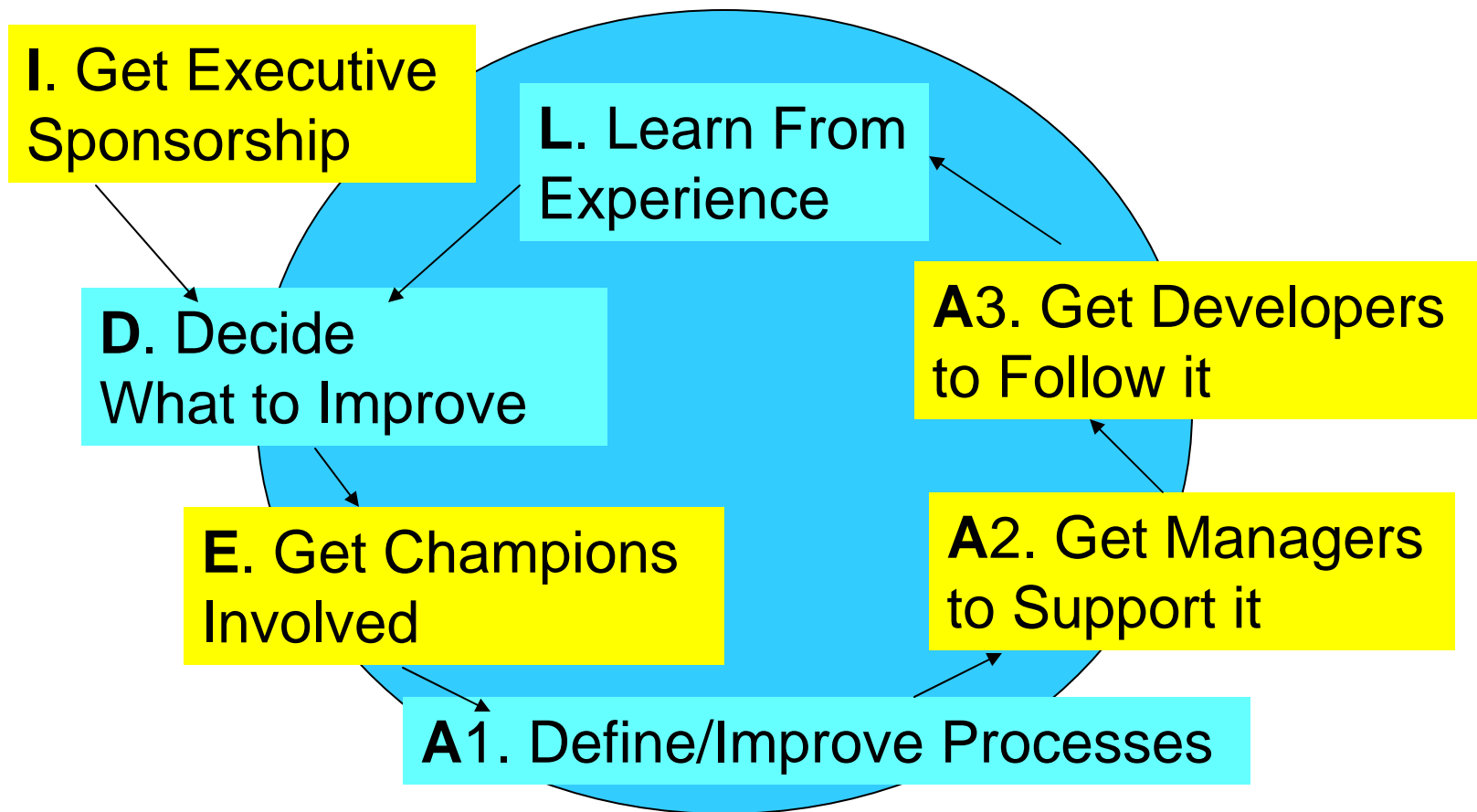
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# IDEAL<sup>SM</sup> Model Involvement

Initiating	<ul style="list-style-type: none"><li>• <b>Get Executive Sponsorship</b></li></ul>
Diagnosing	<ul style="list-style-type: none"><li>• Decide What to Improve</li></ul>
Establishing	<ul style="list-style-type: none"><li>• <b>Get Champions Involved</b></li></ul>
Acting	<ul style="list-style-type: none"><li>• Define/Improve Processes</li><li>• <b>Get Managers to Support it</b></li><li>• <b>Get Developers to Follow it</b></li></ul>
Learning	<ul style="list-style-type: none"><li>• Learn From Experience</li></ul>

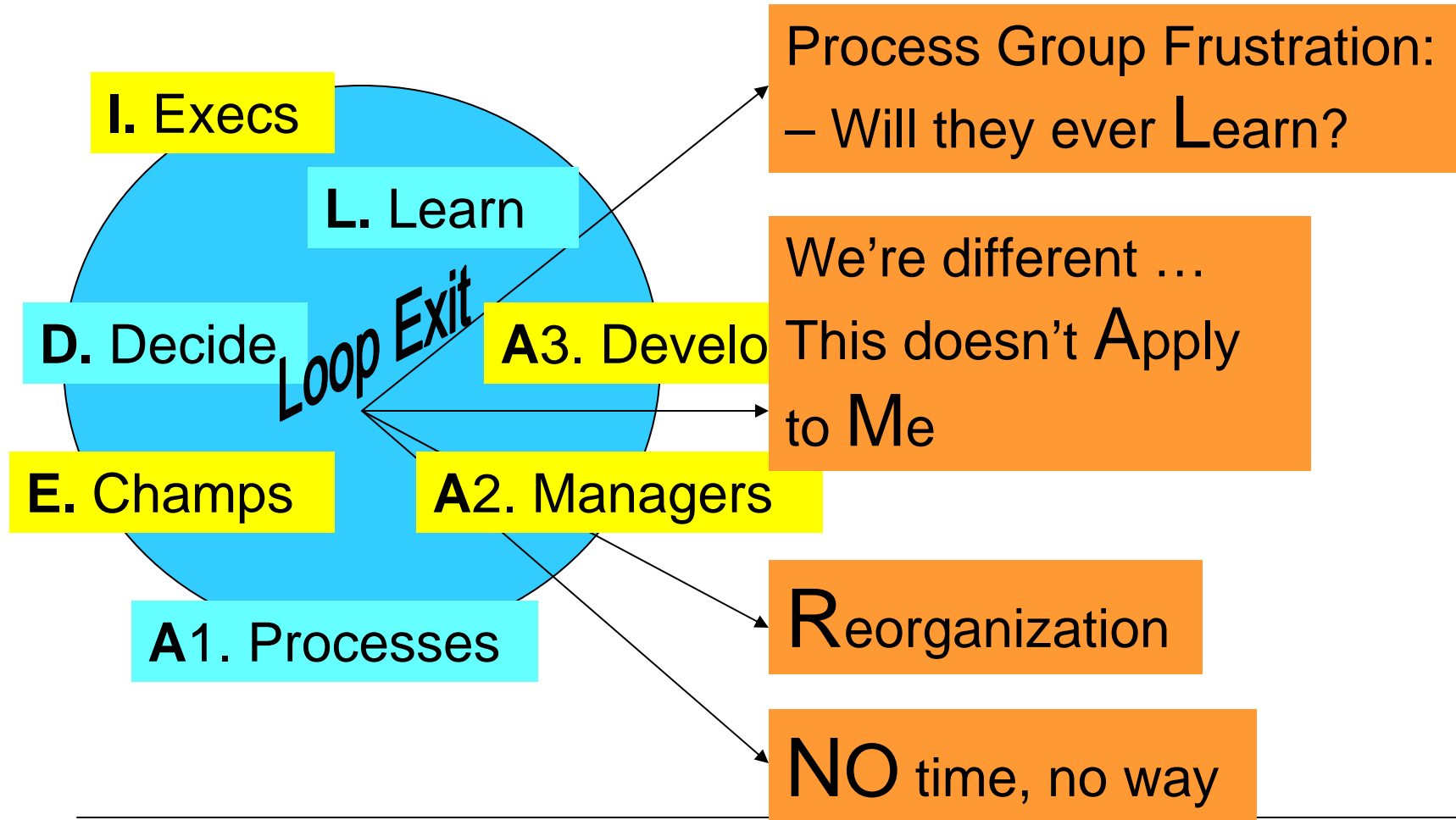
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# The IDEAL<sup>SM</sup> Model Map



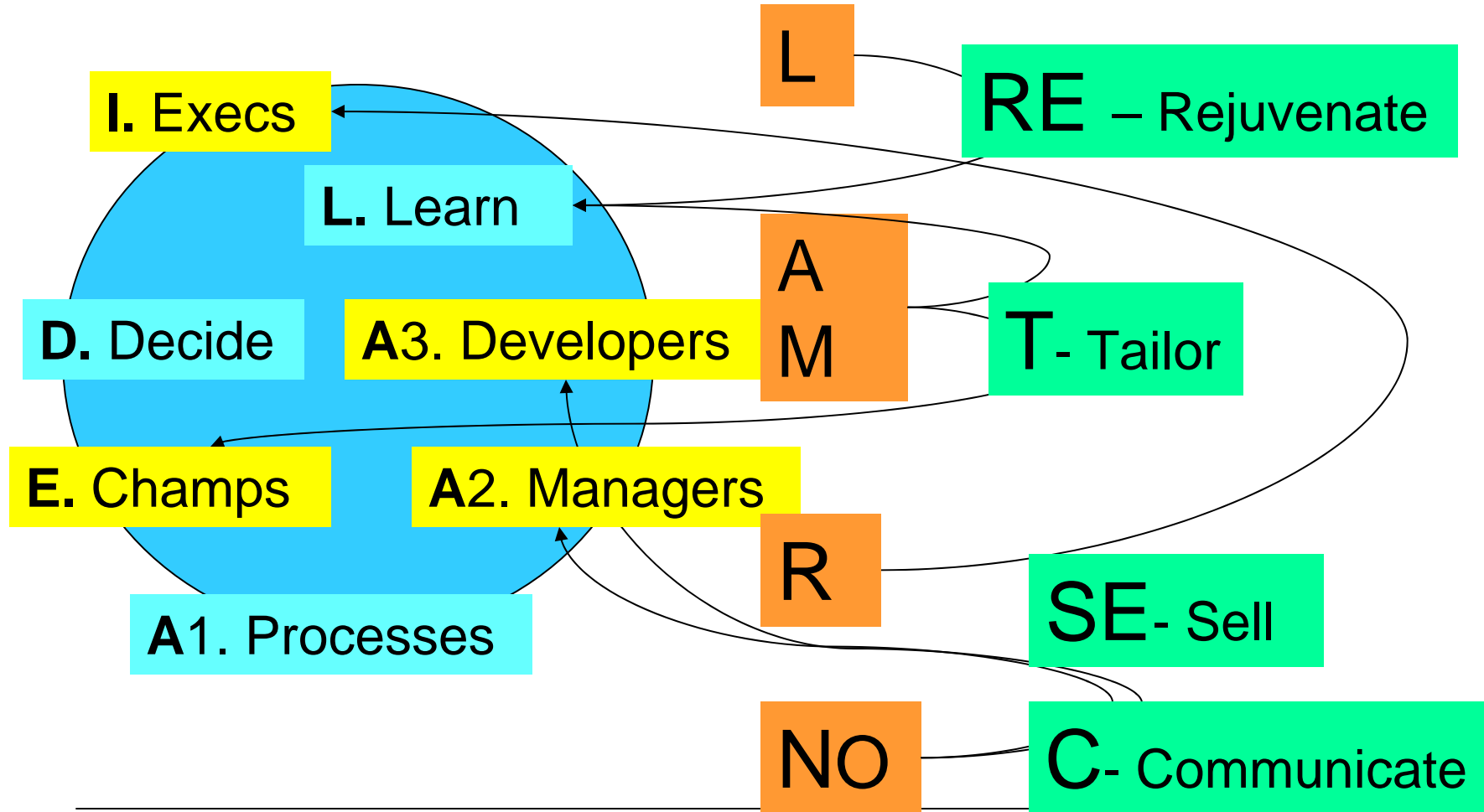
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# The NORMAL Model





# The SECRET Map



# Decoding Chart

NO – NO time, no way

SE – Sell & Enlighten

C – Communicate  
Expectations Often

## *Loop Re-Entry Points*

• Get Managers to Support it

• Get Developers to Follow it

R – Reorganization

SE – Sell & Enlighten

• Get Executive Sponsorship

MA – This doesn't Apply to Me

T – Tailor things to fit  
new situations

• Get Champions Involved

• Learn From Experience

L – Will they ever Learn?

RE – Rejuvenate & Encourage

• Learn From Experience

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# The Secrets

**SE** – Sell & Enlighten

**C** – Communicate Expectations Often

**RE** – Rejuvenate & Encourage

**T** – Tailor things to fit new situations

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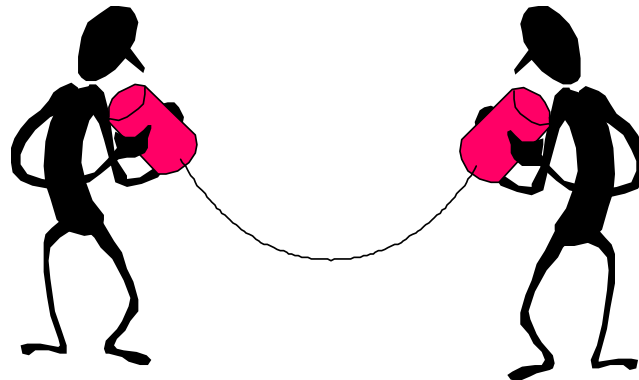
# Sell & Enlighten



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# What's the Secret to...

...getting people to listen to you?

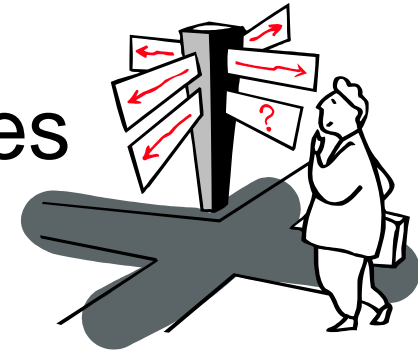


*“If you don't talk the way people listen,  
it doesn't matter what you say”*

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# Special Concerns of the Executive

- Business & strategic objectives
- Quantitative results



*5X Productivity improvement*  
*70 % fewer defects*  
*50% less cycle time*



- Return-on-investment

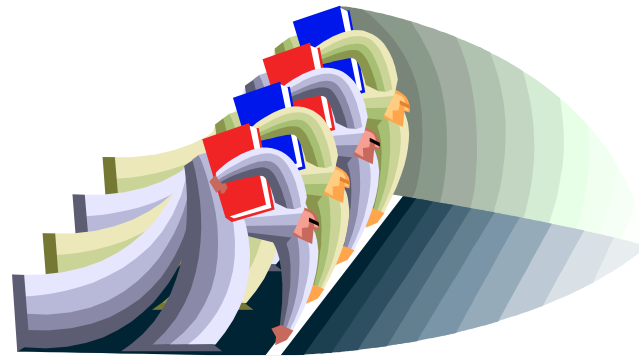


**10?**  
**7?**  
**2.3?**

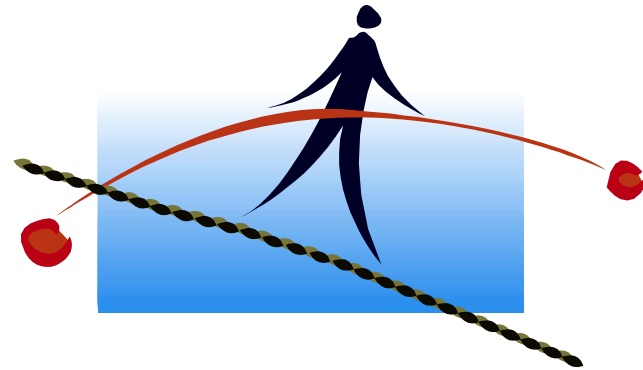
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# Special Concerns of the Manager

- Fast Action



- The Balancing Act (Needs, Resources)



- Looking Competent

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# Special Concerns of the Developer

- Improving Personal Competence
- Goal Achievement
- Schedule Pressure

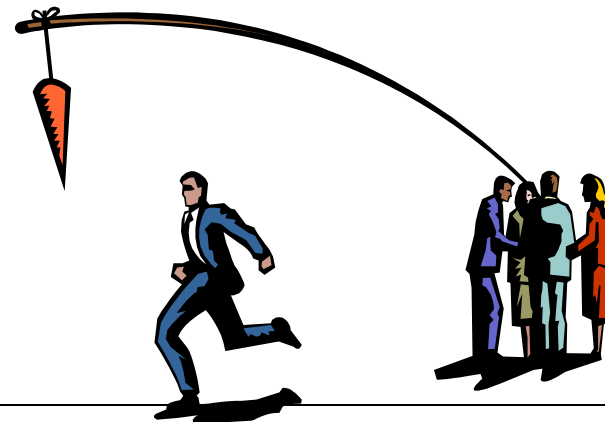




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# Special Concerns of the Process Group

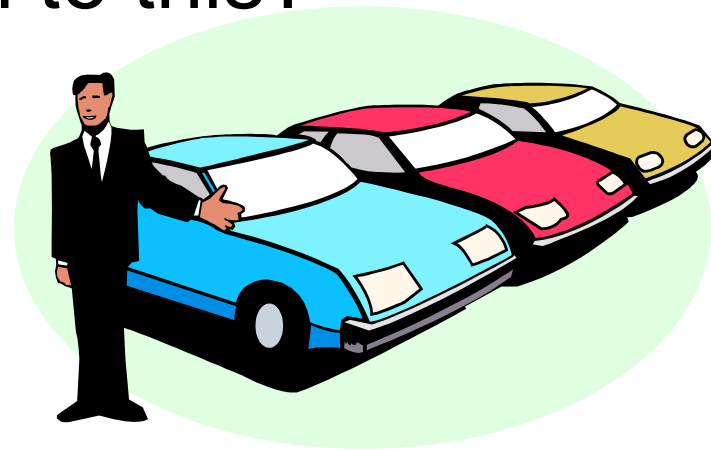
- Improving Organizational Capability
- Energy and Motivation
- The Human Element



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# What's the Secret to...

- ...selling managers on committing to SPI?
- ...getting people to pay attention to this?



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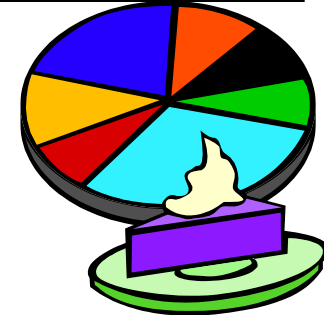
# Expanding the Scope of the SPI Job

- Recognize that you are marketing and selling SPI as a “product” and also acting as a collaborative internal consultant
- Use established methods
  - Marketing
  - Sales
  - Internal Consulting



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# Marketing: Market Segmentation



1. **Make a list** of every single possible group, subgroup, informal group you can think of in your organization
2. **Look for similarities** between groups, such as responsibilities, actual work, client groups, demographics, etc..  
Group together where it makes sense  
*(Remember, nothing is set in concrete)*
3. **List groups and capture work responsibilities, concerns, and communication channels**
4. **Research SPI needs** of each group

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# SPI Market Segmentation Example

Group	Primary Work Responsibilities	Primary SPI Concerns	Preferred Communication Channels
Senior / Middle Management	Fiscal Health Customer Satisfaction Future Business Opportunities	Cost to implement Capability of internal implementation staff Actual "level" of the organization Impact on organizational morale.	Email Paper report/memo Weekly staff briefing

# SPI Market Segmentation Example

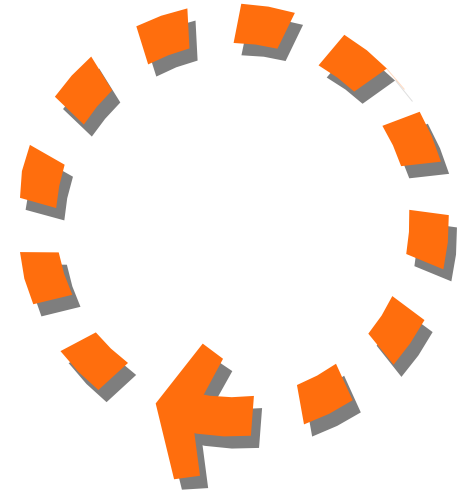
Group	Primary Work Responsibilities	Primary SPI Concerns	Preferred Communication Channels
Project Managers	Deliver product Manage development staff	Cost to implement Impact on delivery schedule Impact on group morale Impact on “position” in the organization Capability of internal implementation staff	Email Face-to-face Weekly staff briefing

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# Sales:

## Sales Life Cycle

- Customer Identification
  - Clients, Needs
  - Decision Makers and Influencers
- Needs Analysis
  - Collect Requirements, Information & Sources
  - Preferences/ Dislikes, Questions to Ask
- Recommendations, Commitment
  - Problem and Solution Sets
  - Proposal with Benefits and Reason to Buy
  - Packaging and Closing the Sale



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# Developing the Message

Who's the client?	(Manager)
What action do you want them to take when you get done selling?	(Commit to SPI)
Why would they want to do this?	(Benefits)
How do they do it?	(Solution steps)
What is the best channel?	(Communication Plan)
What language do they speak?	(Big picture, bottom line first, or benefits first)
What additional information do you need to sell?	(Competitive benchmarking data, testimonials, etc. )





# Business Case Results

From 14 organizations using CMMI,  
reporting percent change over time

From *Evidence about Impact and  
Value Added: One Year Later*  
Dennis R. Goldenson  
and Diane L. Gibson, SEI/CMU 2004

Improvements	High point	Median point	Low point	# data points
Cost	83%	26%	5%	8
Schedule	90%	55%	15%	10
Productivity	75%	28%	11%	4
Quality	72%	47%	33%	6
Customer Satisfaction	55%	33%	10%	3
ROI	13 : 1	3.8 : 1	2 : 1	4

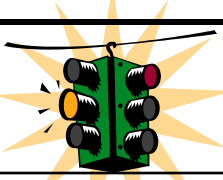
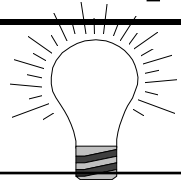


# The Real Cost of Not Using Best Practices

	<u>Project A</u>	<u>Project B</u>	<u>Project C</u>	<u>Project D</u>	<u>Project E</u>
<b>Does this:</b>	Code Fix Deliver	Code Fix Deliver	Code Fix Deliver	Code Fix Deliver	Code Fix Deliver
	<i>No Reqts Control Faulty Design Bugs in Delivery</i>	Requirements Design Test	Requirements Design Test	Requirements Design Test	Requirements Design Test
	<i>Activities unplanned Unsure of status Reqts. not met No version control No documentation</i>	<i>Activities unplanned Unsure of status Reqts. not met No version control No documentation</i>	Plan Track QA CM Document	Plan Track QA CM Document	Plan Track QA CM Document
<b>Has these risks:</b>	<i>No resources No standards No prior history Untrained people Mgt. unaware</i>	<i>No resources No standards No prior history Untrained people Mgt. unaware</i>	<i>No resources No standards No prior history Untrained people Mgt. unaware</i>	PAL OSSP OMDB Training Reviews	PAL OSSP OMDB Training Reviews
	<i>No Dept. comm's No Org coordination Maturity unknown</i>	<i>No Dept. comm's No Org coordination Maturity unknown</i>	<i>No Dept. comm's No Org coordination Maturity unknown</i>	<i>No Dept. comm's No Org coordination Maturity unknown</i>	SEPG SEPO SCAMPIs

From: <http://sepo.spawar.navy.mil>

# “Elevator Speech” Examples

 Mistakes	Proven Winners 
<i>“Getting to level 4 will put us one level above our competition”</i>	<i>“Fewer product defects will reduce cost and improve customer satisfaction”</i>
<i>“We can make Maturity Level 3 in three months”</i>	<i>“Let’s conduct an informal benchmark appraisal and use the results to formulate our improvement plan”</i>

- Sell business results instead of maturity levels
- Set realistic expectations

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# Communicate Expectations

Often

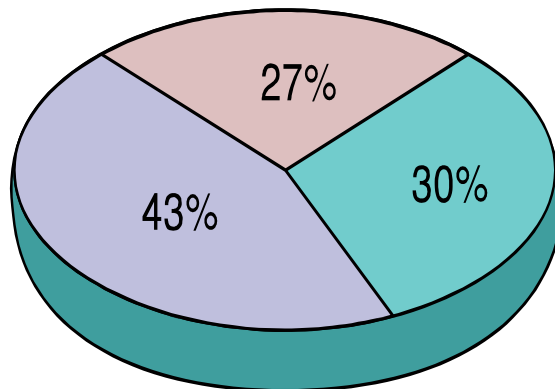


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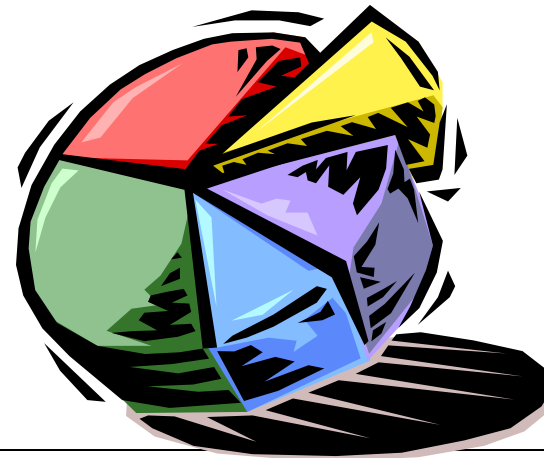
# Know Yourself and Your Audience

- What style are you?  
What style is your audience?
  - What role does your audience play?
- 

**Sensor:**  
Results, Pragmatic,  
Executive Summary









**iNtuitive:**  
Ideas, Creative,  
Pictures and Drawings



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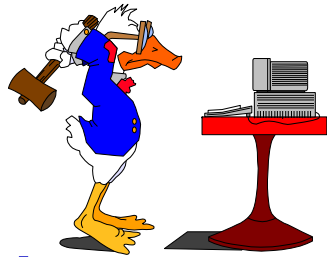
# Customize Communication to Your Audience

<p><i>Sensing Types – Prefer to see Data and Facts</i></p>	<p><i>iNtuitive Types – Prefer to see Ideas and Concepts</i></p>
<p><b>66% of managers,</b> </p>	<p><b>33% of managers,</b> </p>
<p><b>50% engineers,</b> </p>	<p><b>50% engineers,</b> </p>
<p><b>29% change agents</b> </p>	<p><b>71% change agents</b> </p>
<p><b>are Sensing</b></p>	<p><b>are iNtuitive</b></p>

- West & Sullivan

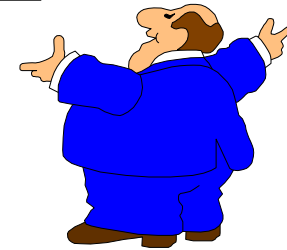
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# iNtuitive Example: Why SPI?

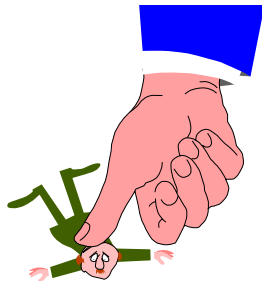


**Less stress.**

**Happy customers.**



**Engineers won't have to perform magic anymore.**



**Fewer interruptions from management.**

**More time for fun, exciting work.**



*- West & Sullivan*

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# Sensing Example: Why SPI?

## Lockheed Martin - Management & Data Services System & Software Integration

- From SW CMM ML2 (1993) to ML 3 (1996) and then to CMMI ML5 (2002)
- Data from their continuing improvement program reports:
  - Increased software productivity by 30%
  - Decreased unit software cost by 20%
  - Decreased defect find and fix costs by 15%
  - Reduced overhead costs of ~ 5%



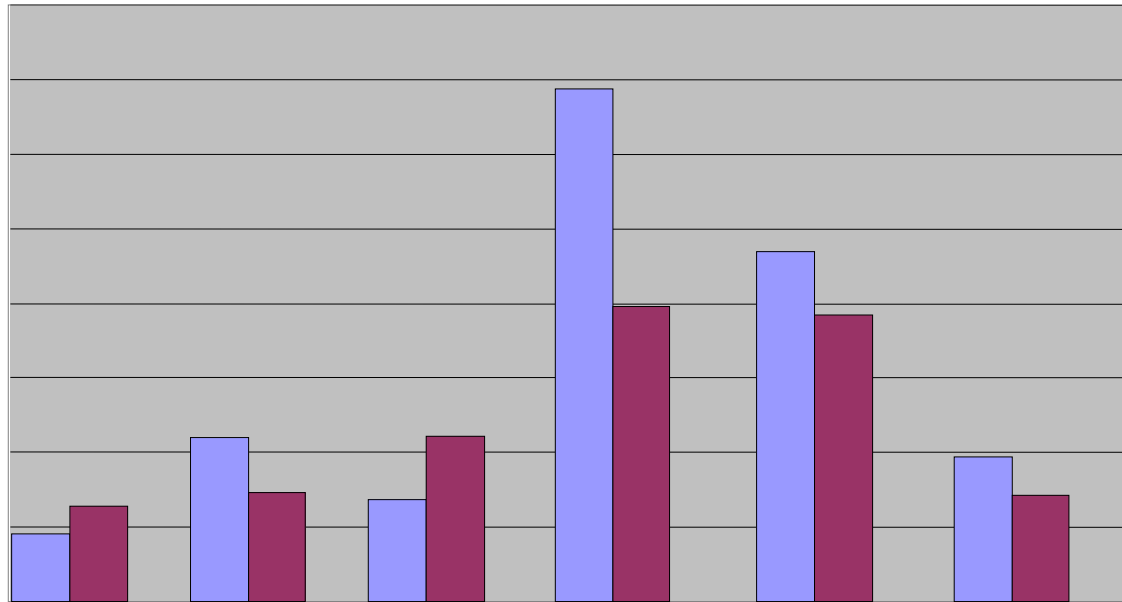
**LOCKHEED MARTIN**

**Demonstrating the Impact and Benefits of CMMI: An Update and Preliminary Results, SEI Special Report, CMU/SEI-2003-SR-009**

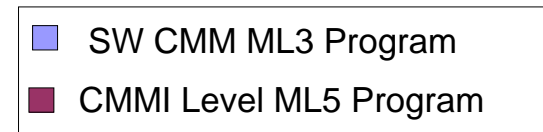


# Improved Defect Find & Fix

Hours/KLOC



Improved Product Quality  
With Real Cost Savings

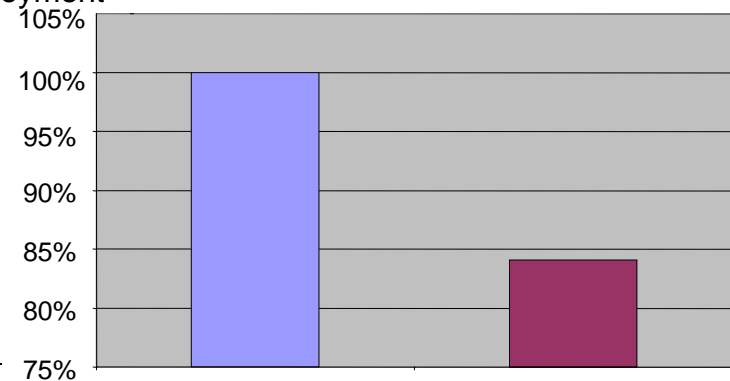


Architecture Design    Software Design    Code & Unit Test    Product Integration & Verification    System Integration & Verification    Deployment

15 % decrease in defect find & fix costs

Lockheed Martin Management & Data Systems

Dollars per KLOC

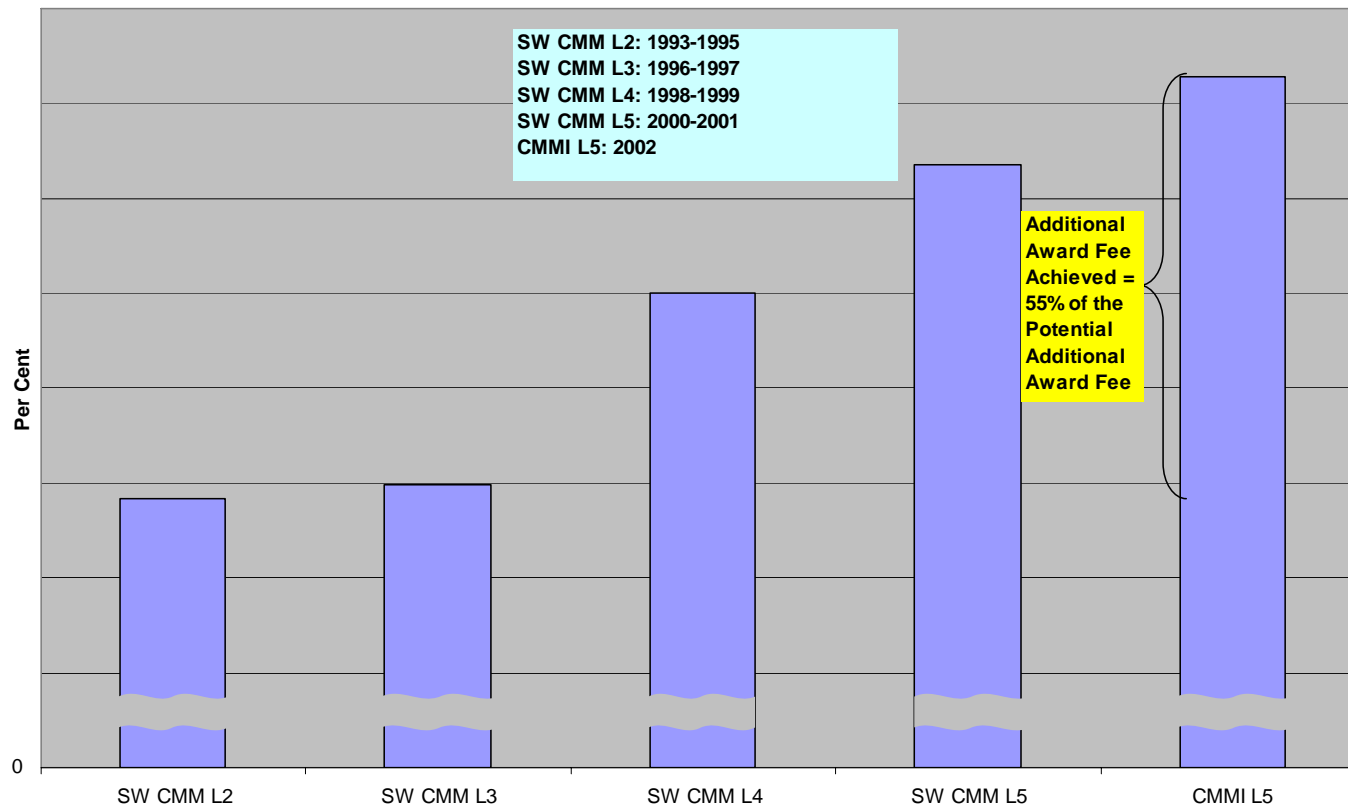


European SEPG

# Customer Satisfaction: Award Fee

## Lockheed Martin Integrated Systems & Solutions

Award Fee vs CMM Level



® CMMI and CMM are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

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## Collection of SPI ROI Data

- **Software Engineering Institute 1994 study:** Average of 5:1 ROI for 13 organizations engaged in SPI
- **Navy FMSO:** saved over \$2 million using Formal Inspections
- **Air Logistics Center:** 7.5:1 ROI, 10X productivity increase
- **Raytheon:** Achieved a 7.7:1 ROI with 2:1 productivity gains, defect rate reduced by 4.2X, reduced testing effort by 1/2. Received \$9.6M bonus for early delivery
- **PRC:** Reduced documentation defects by 78%, code defects by 70%, defects found in operation by 60%, increased ability to meet monthly cost goals by 40%
- **Boeing:** Reduced cycle time up to 50%, increased productivity 240%, and realized a cost-to-benefit ratio of 1:7
- **Ogden Air Logistics Center:** Spent ~\$5M to reach Level 5; received over \$100M in new work (19-to-1 ROI)

# Intangible Benefits of SPI

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At Ogden Air Logistics Center - *CrossTalk*, May 1999

- **Positive** influence on working environment
- **Beneficial** structure provided to the development process
- **Fewer** surprises and last-minute glitches, “fire drills” **reduced**
- **Better** quality software; overtime & unhappy customers **reduced**

At Boeing Space Transportation Systems - *IEEE Software*, Oct 1999

- Employee satisfaction **up from 74% to 96%**
- Employees motivated to **eliminate** defects, **improve** quality

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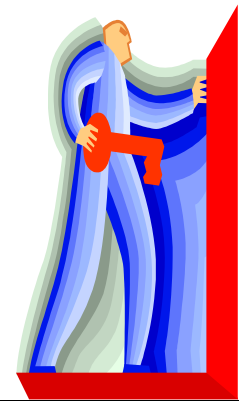
At SSC San Diego *Costs and Benefits of SPI*, Karen D. Prenger

- **Better** management control over project, team communication
- **Better** overall performance of the software
- **Improved** morale of team, **less** overtime, absenteeism
- **Increased** competitive advantage and repeat business

-

At multiple sites - *DACS: Business Case for SPI Revised*

- **Improved** customer satisfaction
- **Improved** professional staff



From: <http://sepo.spawar.navy.mil>

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## Testimonials from Level 3 Project Managers about SPI:

- We have been awarded new work based on our SPI efforts
- We have fewer surprises, last minute glitches, and fire drills
- We have fewer risks this year because we learned from our Risk Management Plan from last year
- We are now consistently producing builds with zero defects
- We produced more complex builds in less time
- Implementing Peer Reviews and other process improvements significantly reduced the problems found and the testing efforts (e.g., reduced trouble reports by 71%, time to conduct tests by 33%, time to fix all trouble reports by 70%)
- We have better communication across the team, and people know what they are supposed to be doing
- The project people have told me they would not work on another project without a defined processes
- I feel I am a much better project manager



From: <http://sepo.spawar.navy.mil>

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# What's the Secret to...

- ...obtaining sponsorship?  
**Before** embarking on a process improvement program



- ...retaining sponsorship?  
**After** a cycle has begun



*It's a continuous process!*

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# Executive Sponsorship

Executive sponsorship includes...

- funding
- resources
- visible support
- setting priorities and expectations
- motivating organizational behavior
  - “walking the talk”



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# Business Objectives

- Explain how process improvement can *support business performance*
  - Higher productivity
  - Better quality
  - Reduced cycle time
  - More satisfied customers
  - Competitive benchmarks



*Higher  
Award Fees*

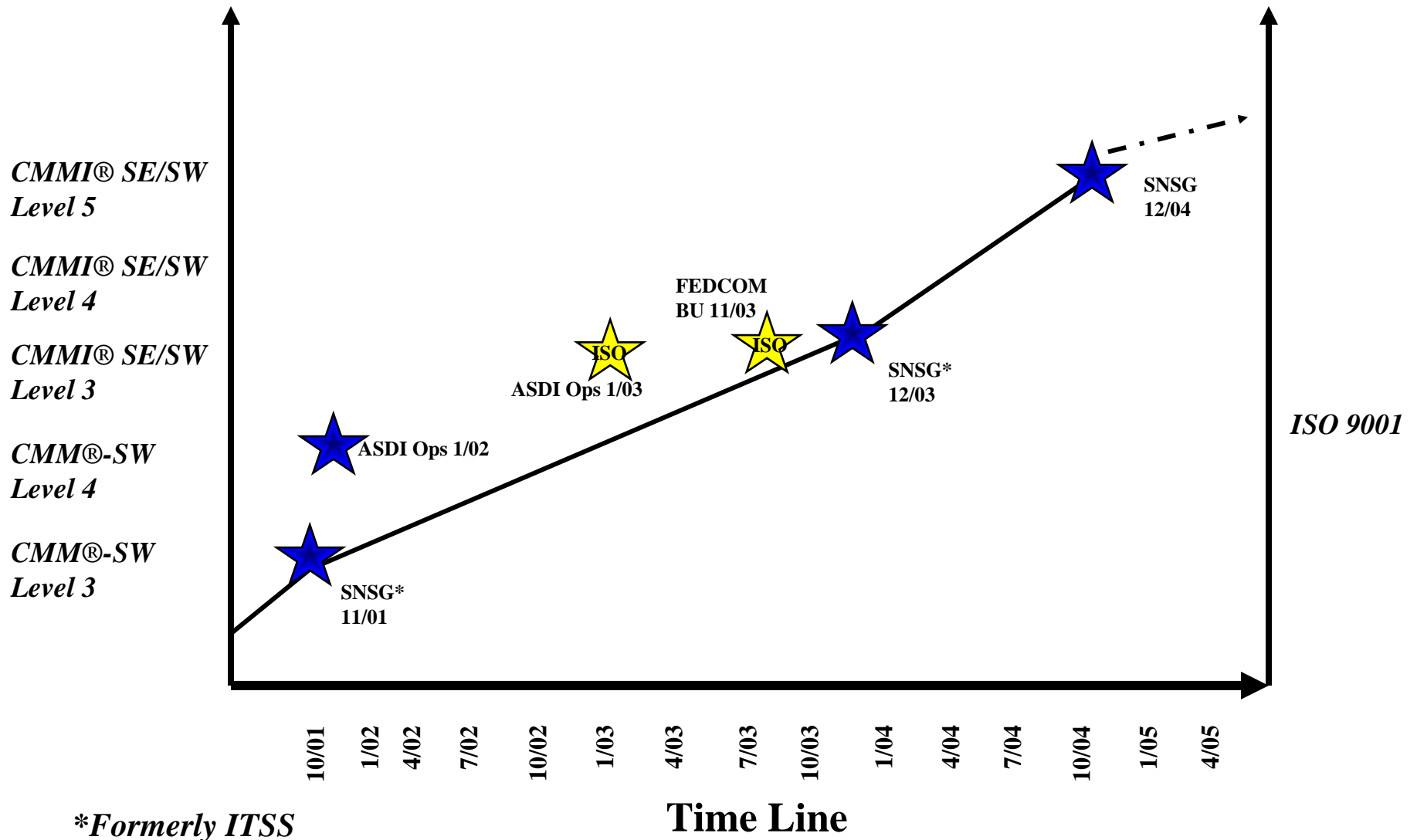


*Bottom-line: improved profitability*





# System and Network Solutions Group (SNSG) Process Improvement Journey: CMMI® and ISO 9001:2000

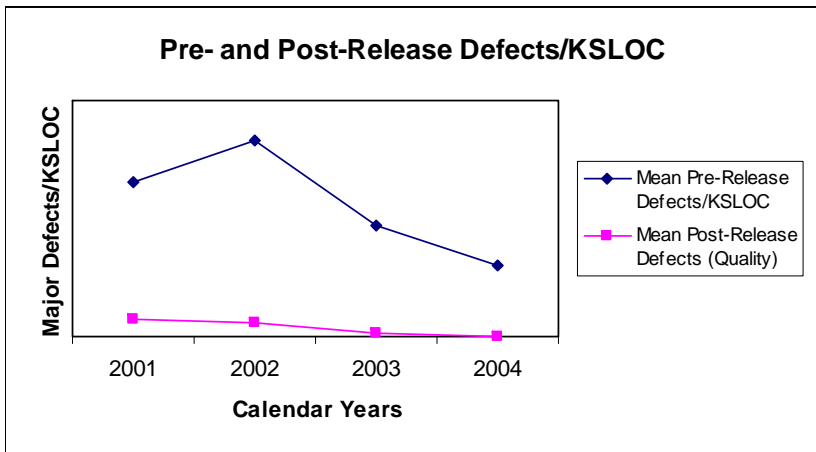




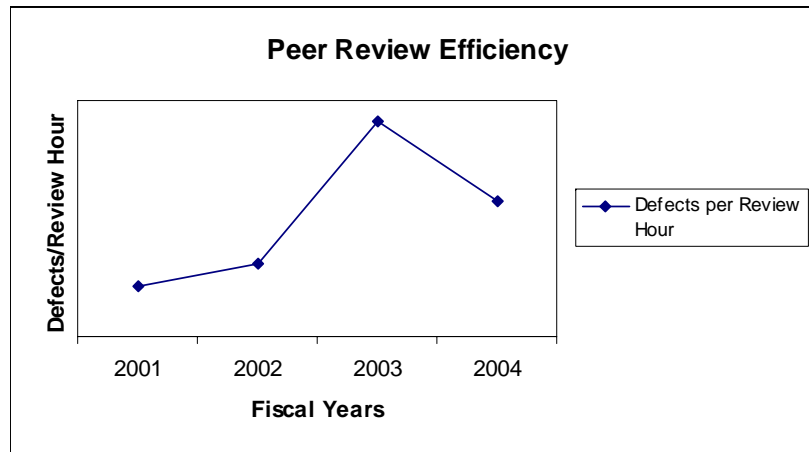
# Overall Process Improvement Benefits

- **Process improvement returns are visible in many metrics and trends:**
  - **Fewer Defects/KSLOC**
  - **Increased Defect Detection Rate**
  - **Higher Productivity (SLOC/person/period)**
  - **Lower Cost of Production (\$/SLOC)**
  - **Higher Client Assessment Ratings**
  - **Higher Maturity Processes**
- **These indicators support the conclusion that process improvement contributes to overall performance.**

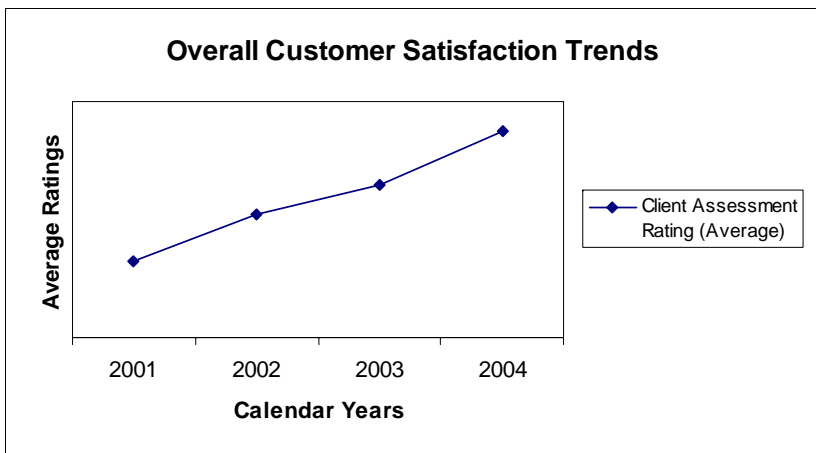
# Some Trends Experienced Along the Way



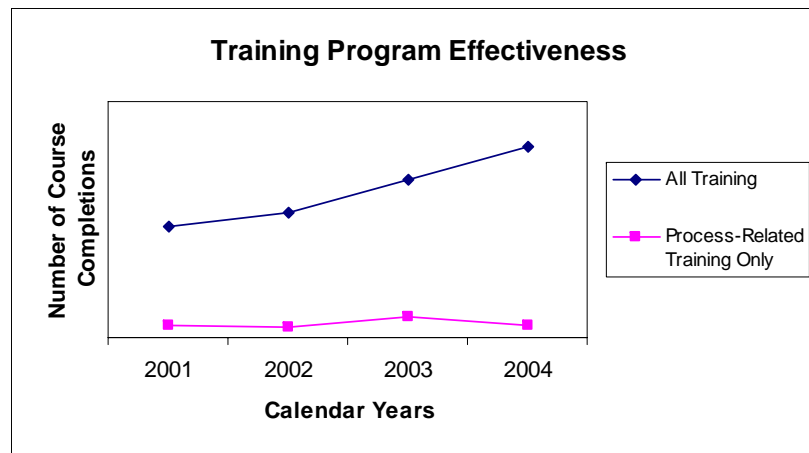
General trend of decreasing defects and increasing product quality over 4 years.



Increase in peer review efficiency despite the fact that there are fewer product defects to find.

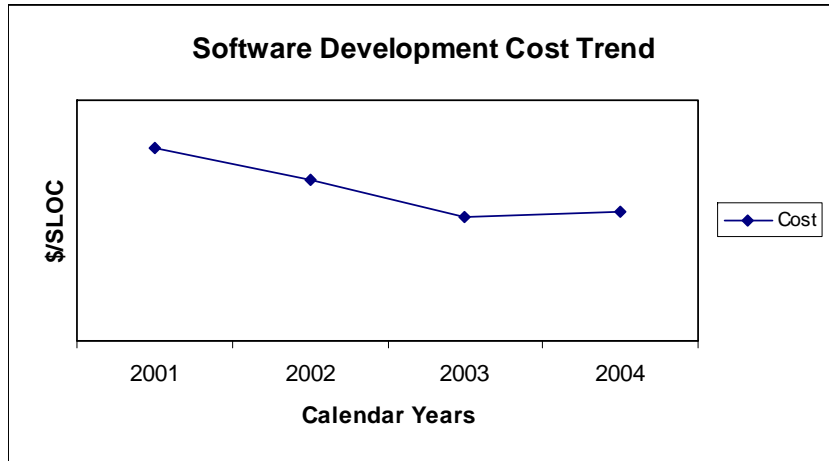


Customer satisfaction ratings have steadily increased.

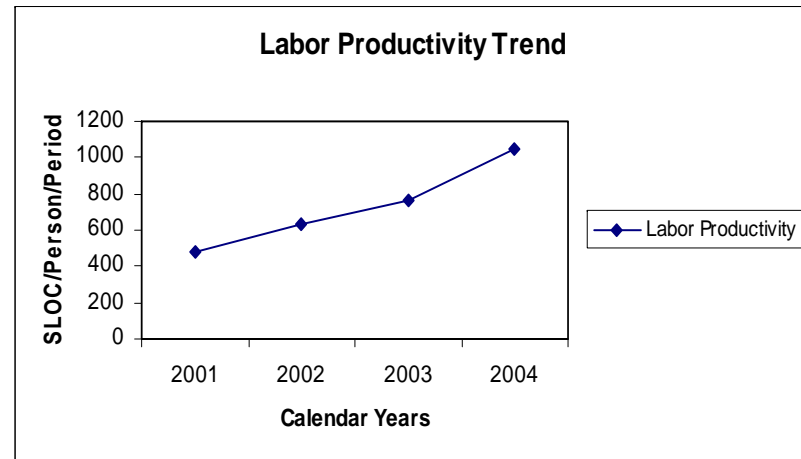


Overall training accomplishments increase while maintaining focus on Revenue, PBT, and process improvement investments.

# And More Trends ...



The relative trend of decreasing costs coupled with increasing productivity of labor. This trend would be more favorable if adjusted for inflation.



Labor productivity averages have increased, influenced by variables such as programming languages, technical improvements, etc.

# Summary

- **Observations attributed to Group-wide process improvement program since 2001 include:**
  - Noticeable 54% drop in pre-release defects detected in software projects.
  - Peer reviews are approximately 84% more efficient since 2002, even though there are fewer defects to find. These trends go in opposite directions, but both translate to positive results. The reviews are finding defects quicker (costing less) when there are less defects to be found (improved product quality).
  - Steady increase in overall customer satisfaction.
  - Annual process improvement performed under planned budgets, all while steadily increasing training and maturity of process assets.
  - All of these trends have been accomplished while exceeding profit goals in each of the last three fiscal years.

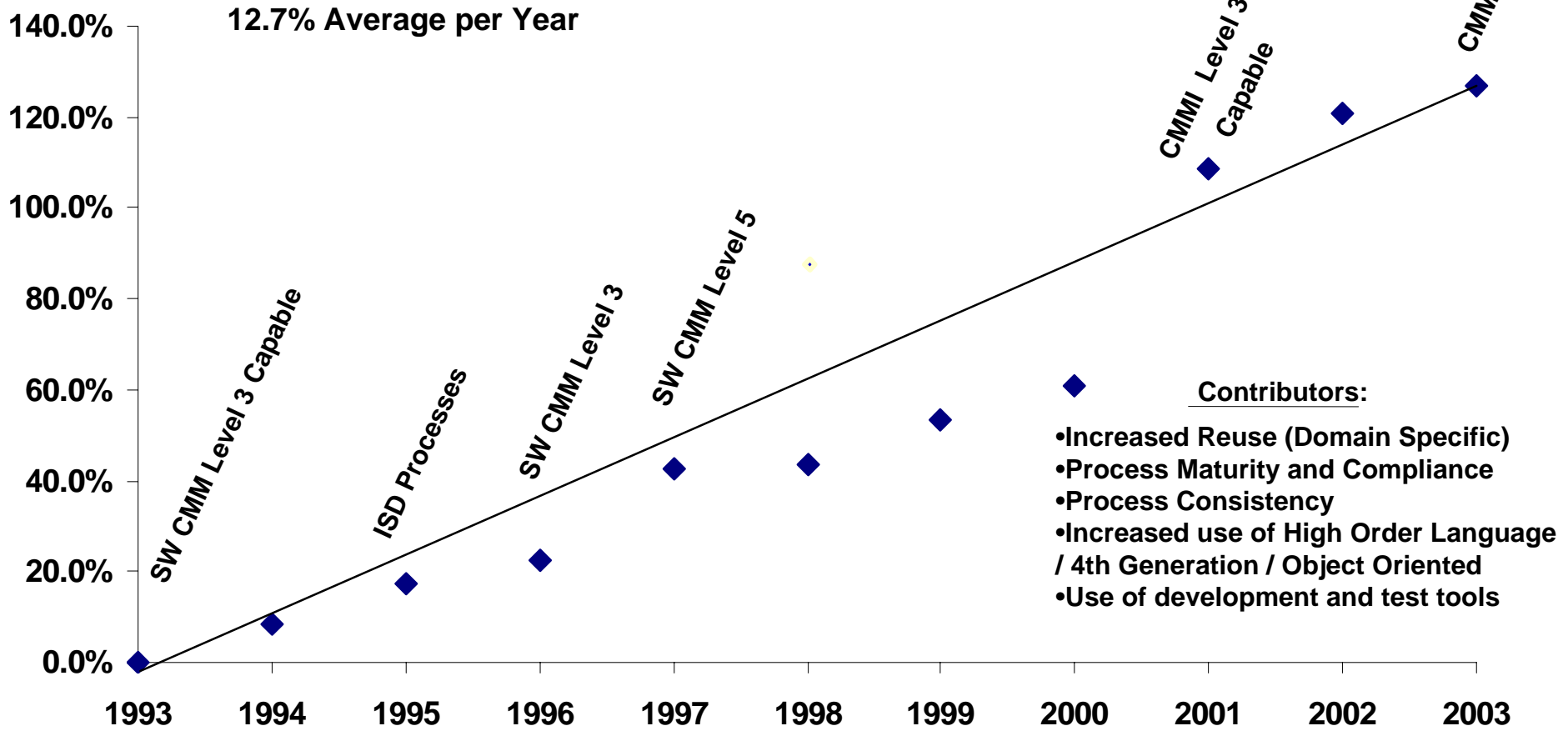


# Lockheed Martin Systems Integration Owego - Software Productivity

## Software Productivity (All Software including Reuse)

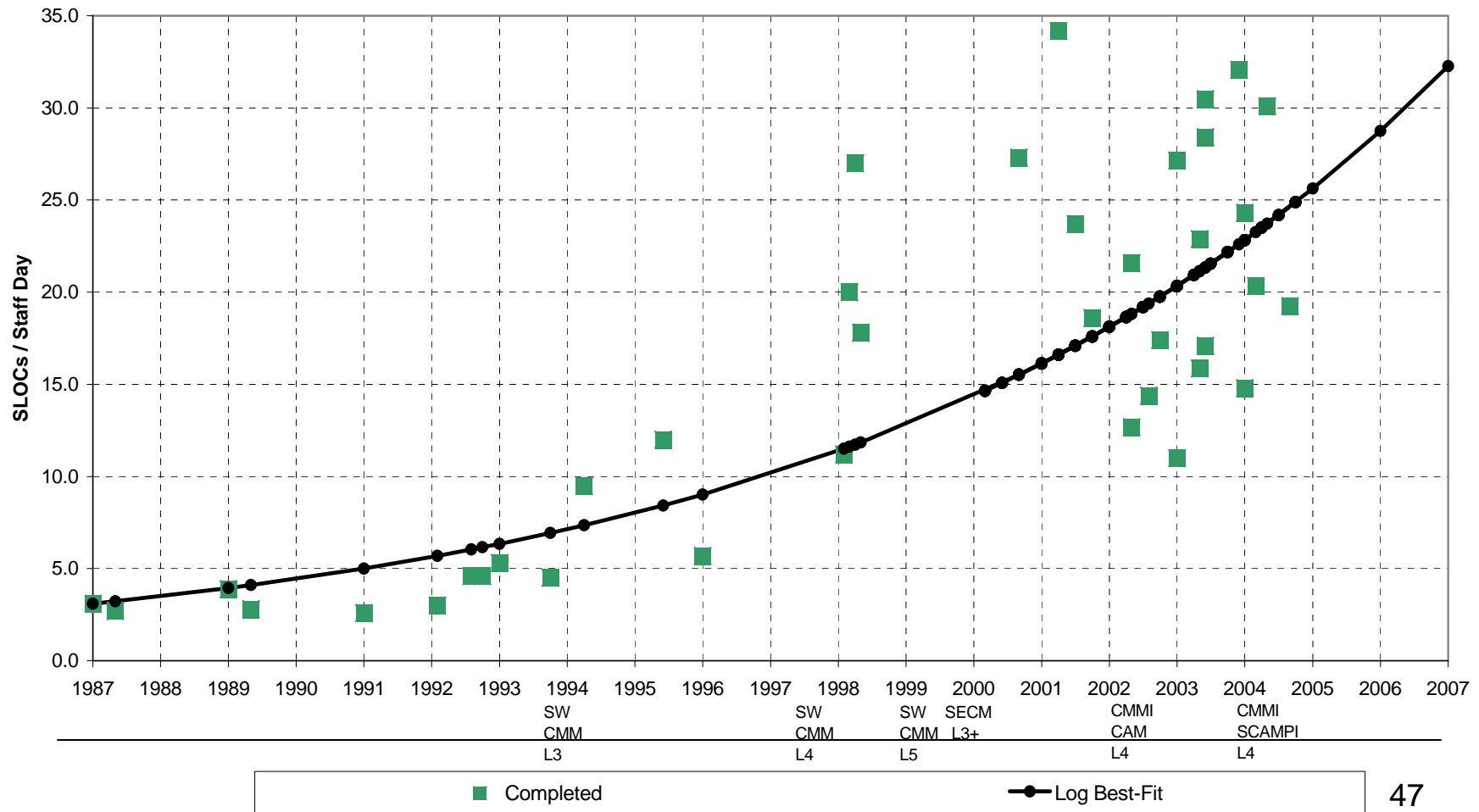
Improvements Since 1993:

12.7% Average per Year

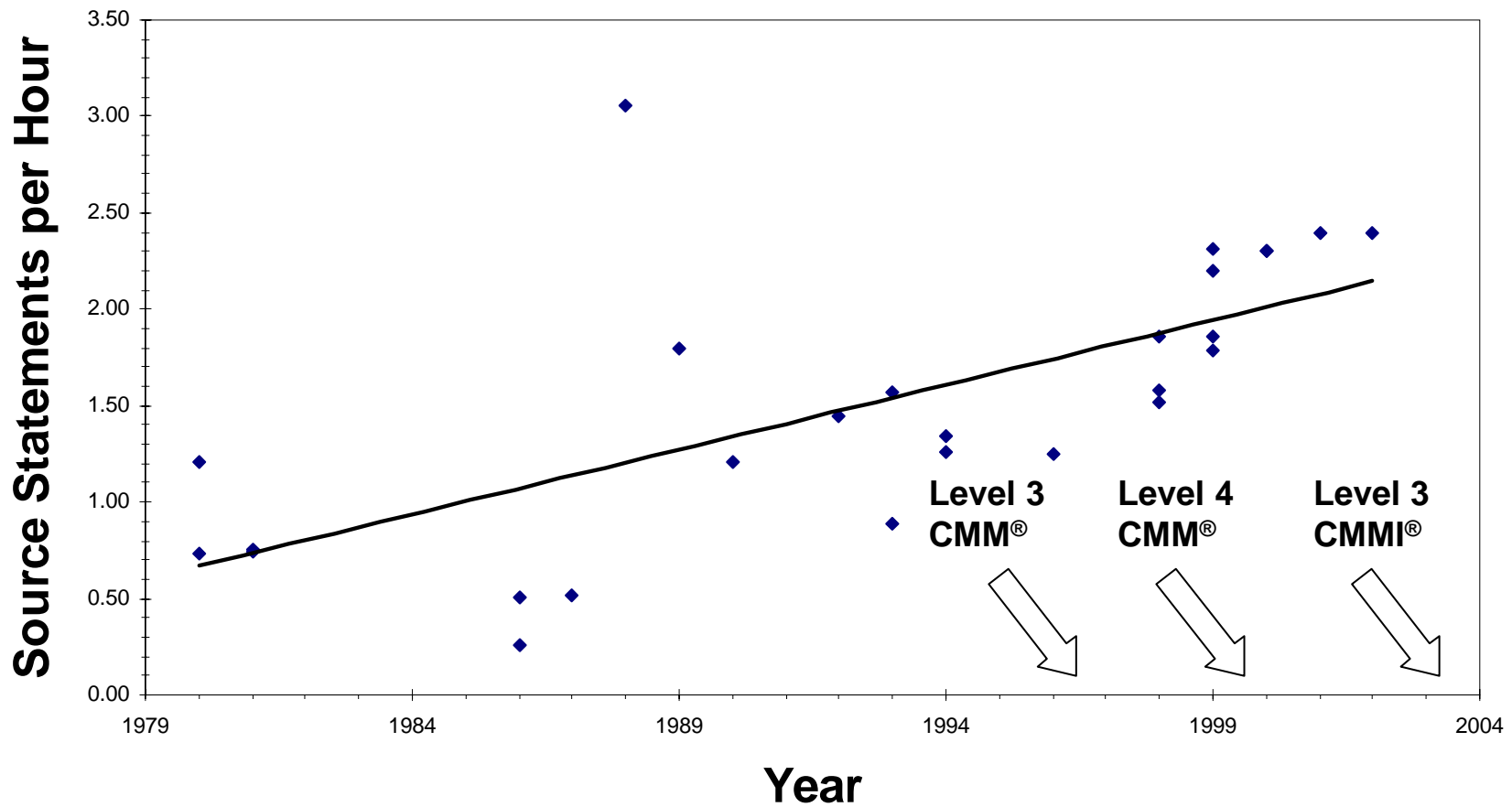


# LM Maritime Systems & Sensors - Syracuse Software Productivity

Software Engineering Productivity History  
(Completed, Current/In-Process, Projected-Goal, BQM)



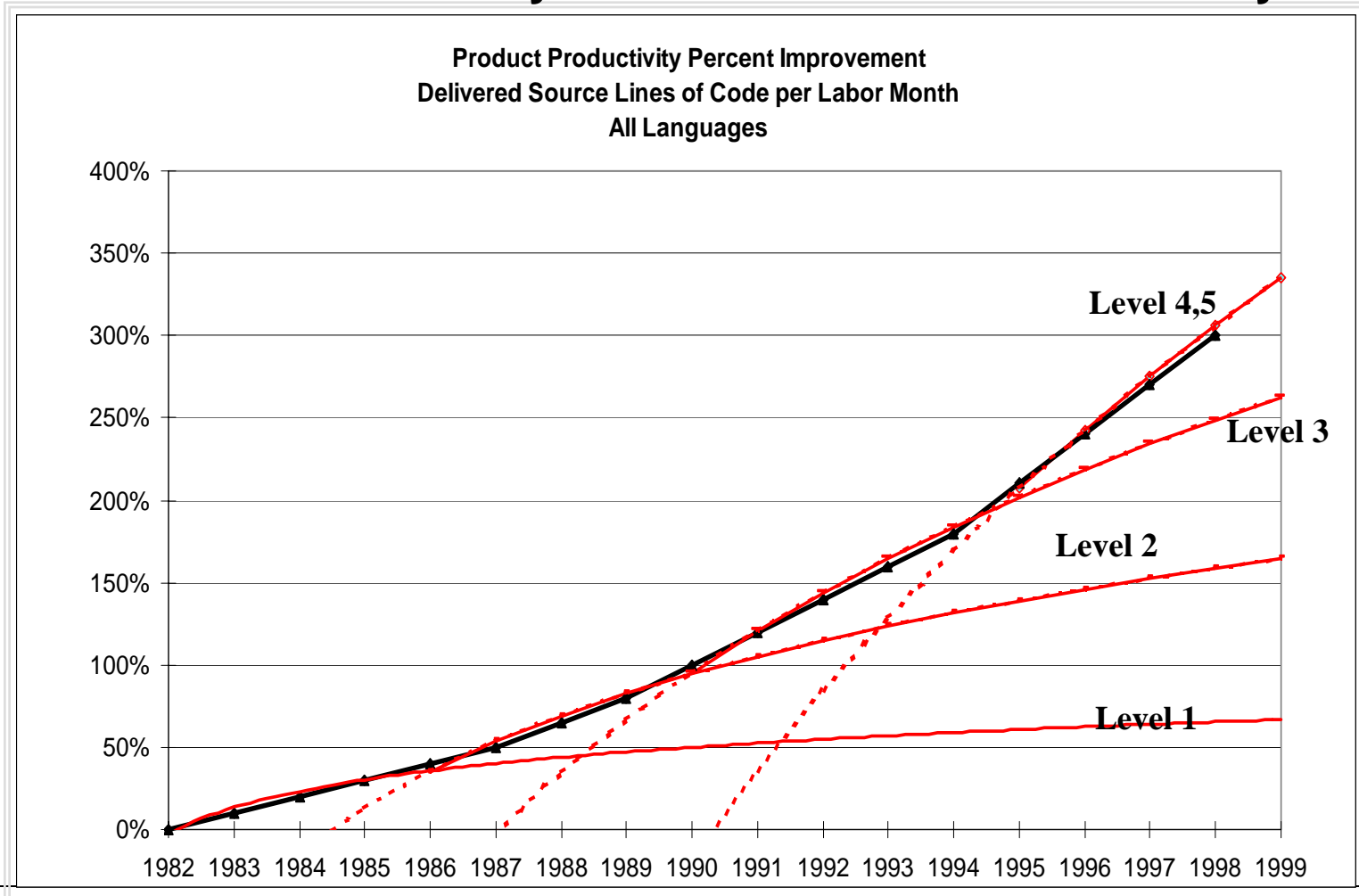
# LM Maritime Systems & Sensors Tactical Systems Software Productivity





# Software Productivity vs. CMM<sup>®</sup> Maturity Level

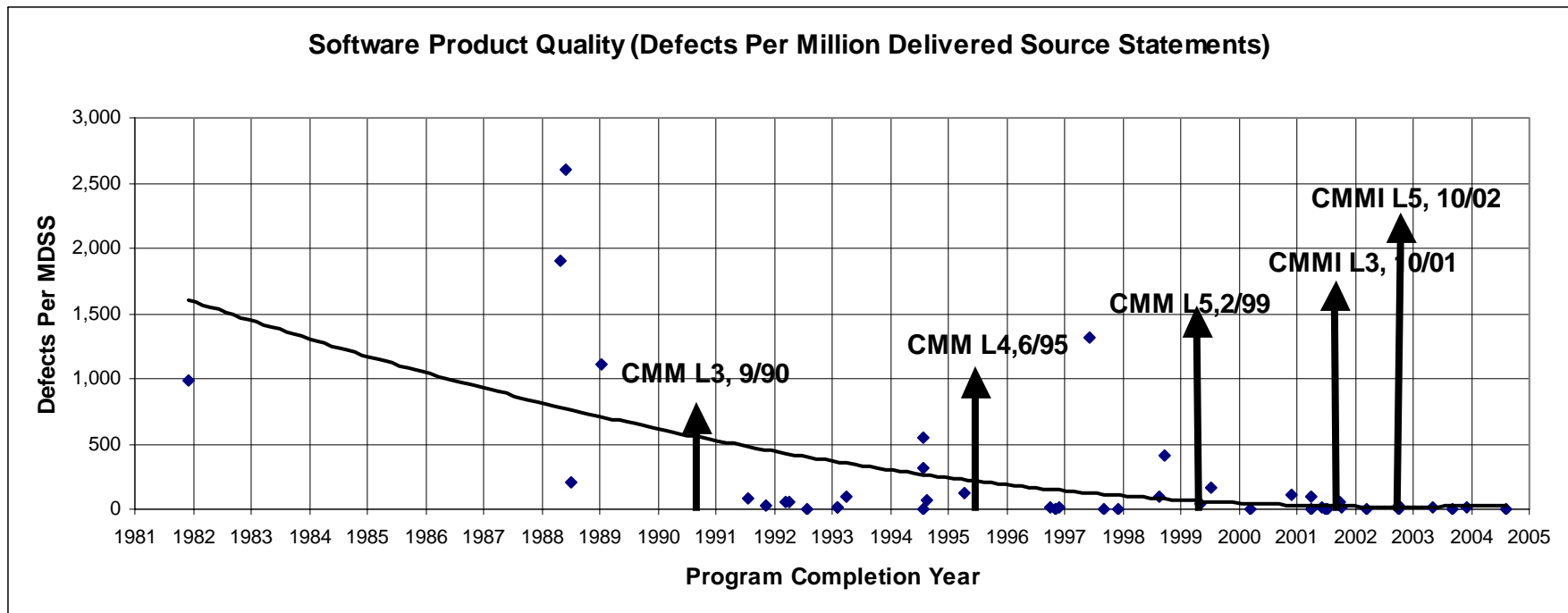
## Lockheed Martin Maritime Systems & Sensors – Undersea Systems



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# Software Product Quality

## Lockheed Martin Maritime Systems & Sensors – Undersea Systems



Note: CMM<sup>®</sup> levels were achieved via CBA IPI. CMMI<sup>®</sup> levels indicate the result of CAM assessments using CMMI<sup>®</sup>-SE/SW/IPPD/SS with a lead appraiser outside of Undersea Systems.

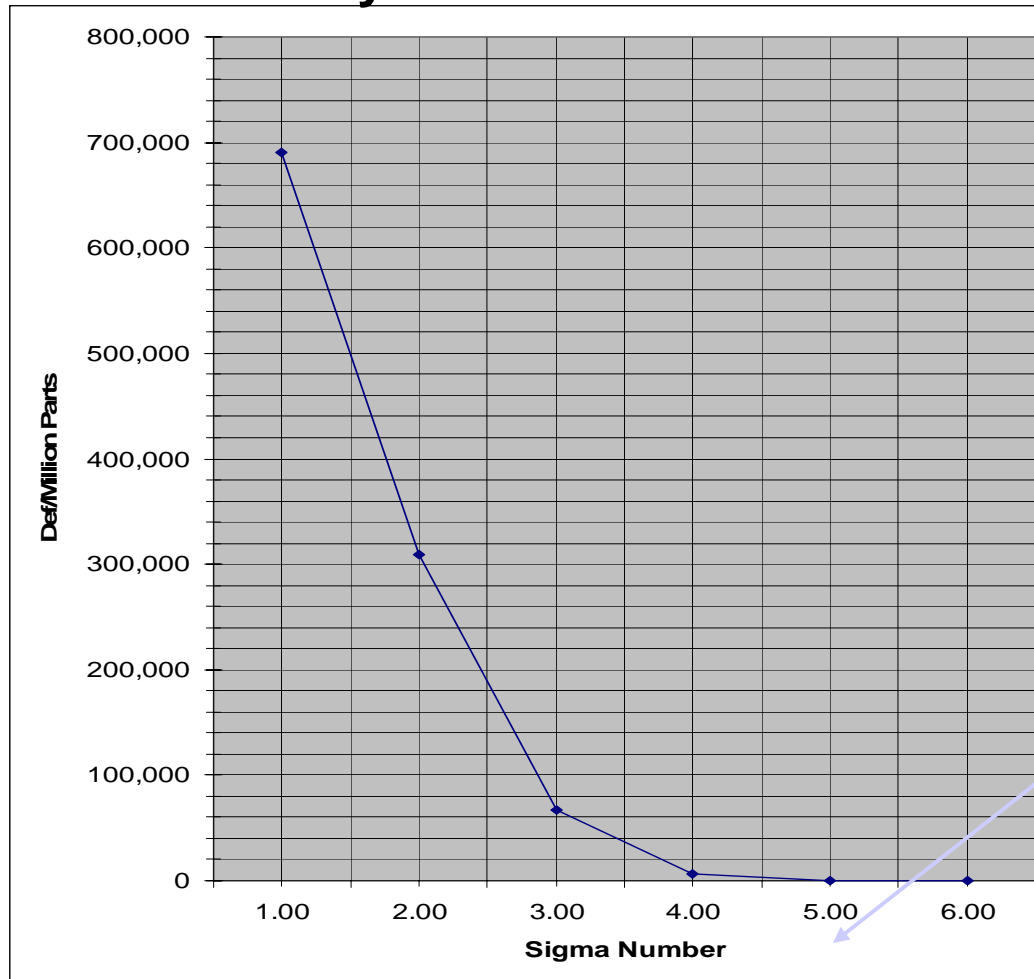
# Software Quality

## Lockheed Martin Maritime Systems & Sensors – Undersea Systems

Sigma	Defects/MS
1	690,000.0
2	308,537.0
3	66,807.0
4	6,210.0
5	233.0
6	3.4

MS = Million  
Source Statements

Product Quality  
Level is in Five  
Sigma Range



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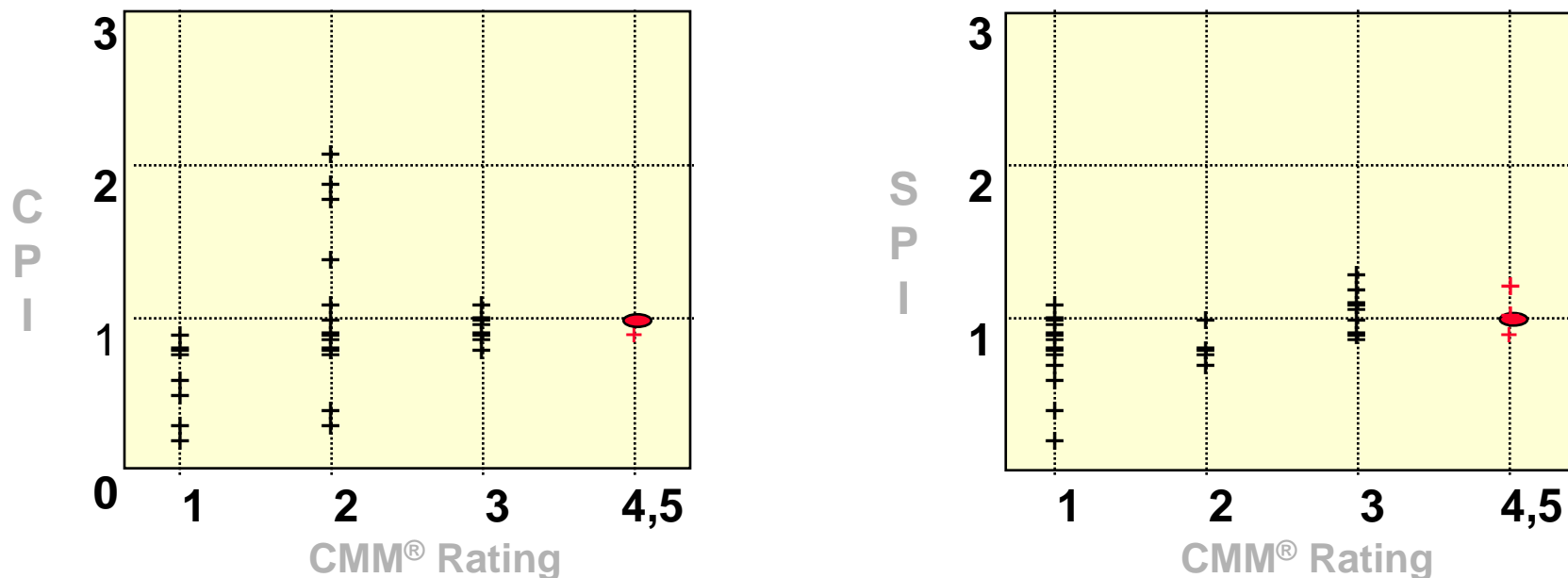
# Predictability at CMM<sup>®</sup> Maturity Level 5

## Lockheed Martin Maritime Systems & Sensors – Undersea Systems

Cost Performance Index (CPI) & Schedule Performance Index (SPI)

SCATTER PLOTS BETWEEN "1" AND "3" RATINGS ARE INDUSTRY SAMPLES.  
LOCKHEED MARTIN DATA HAS BEEN ADDED IN RED.

DATA FROM 8 PROGRAMS IN 2Q 2003

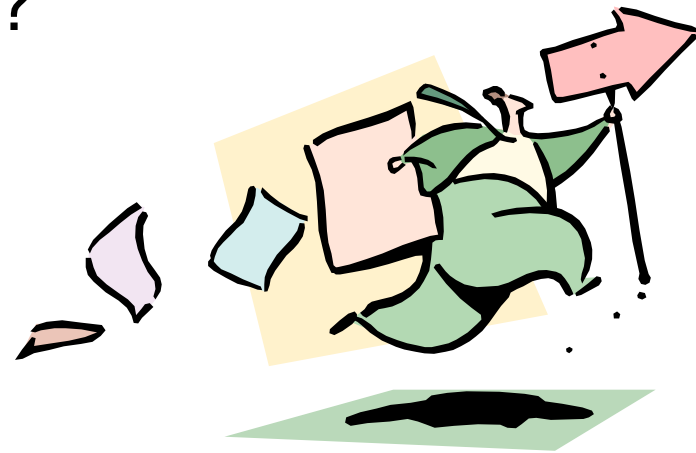


Reference: "A Correlational Study of the CMM<sup>®</sup> and Software Development Performance"  
Lawlis, Flowe & Thordahl, CROSSTALK, September 1995

---

# What's the Secret to...

- ...getting developers to invest time in SPI?
- ...getting people to adopt changes?



(Remember who they are, what they like, and what they need...)

---

# The 10-hour rule

1 hour in inspection can catch bugs,



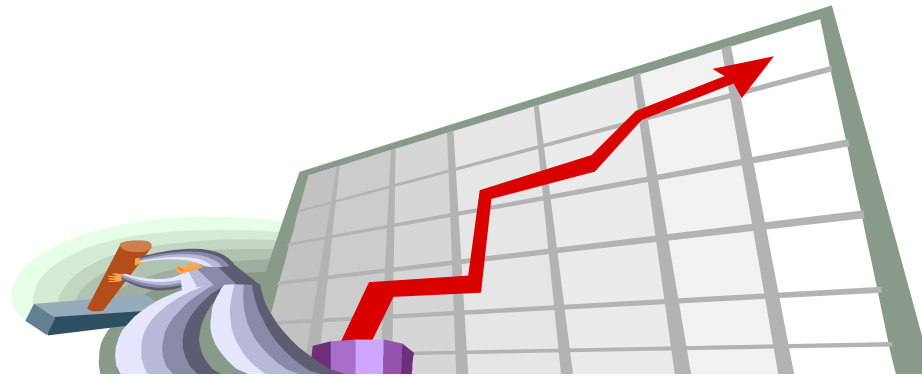
where if the same bugs escape to test, it takes 10 hours to find and fix,

where if the same bugs escape to customers, it takes 100 hours or more to find and fix.

---

# Bottom-line

2 hours in  
inspection  
in one  
week

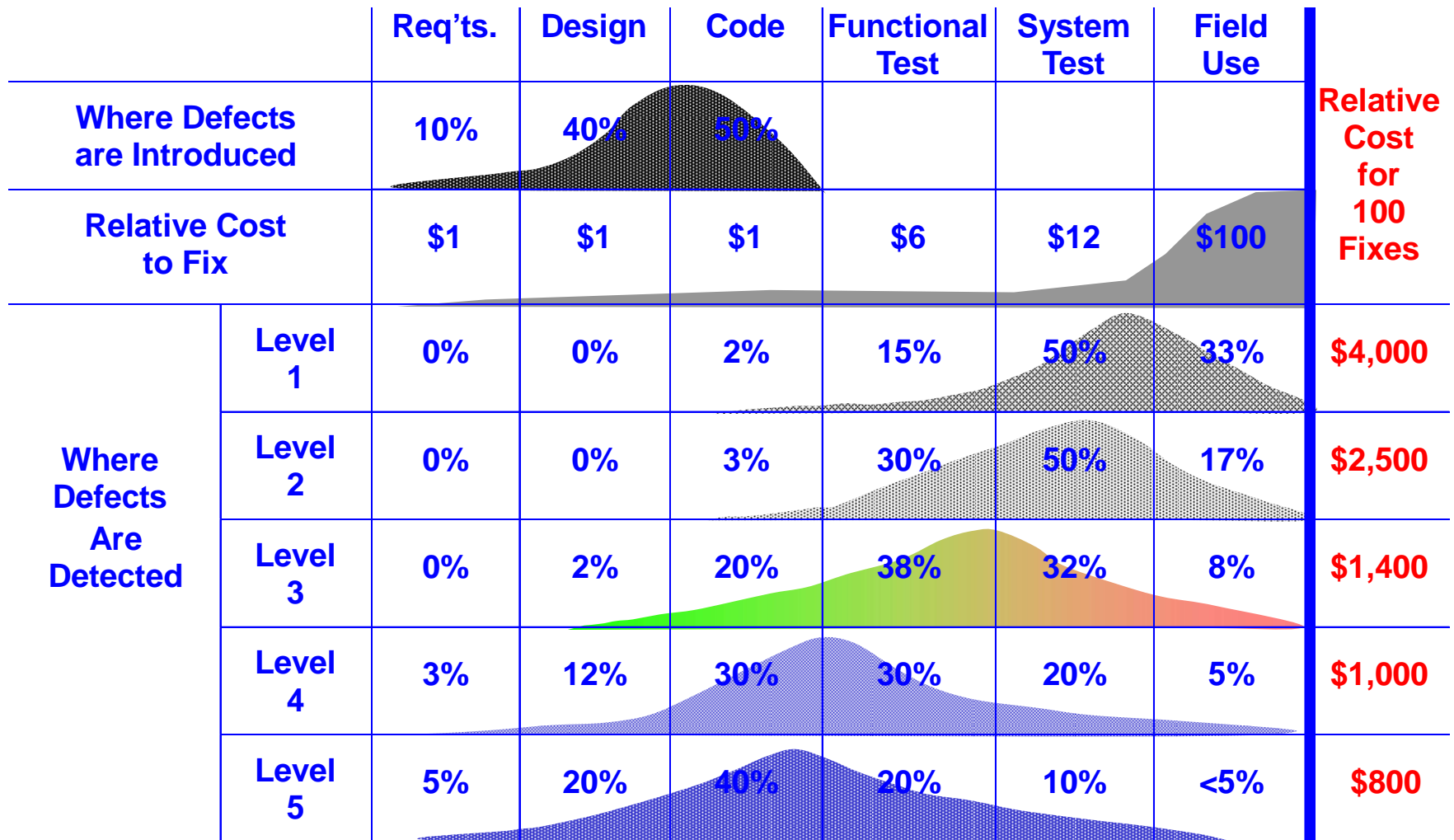


Saves *at least 20* hours of  
rework downstream

---

That is a savings of  
*1/2 a week* of work  
for every inspection

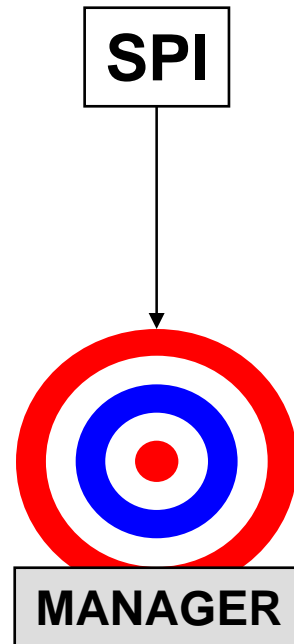
# Defect Detection and Cost Changes as Process Maturity Increases



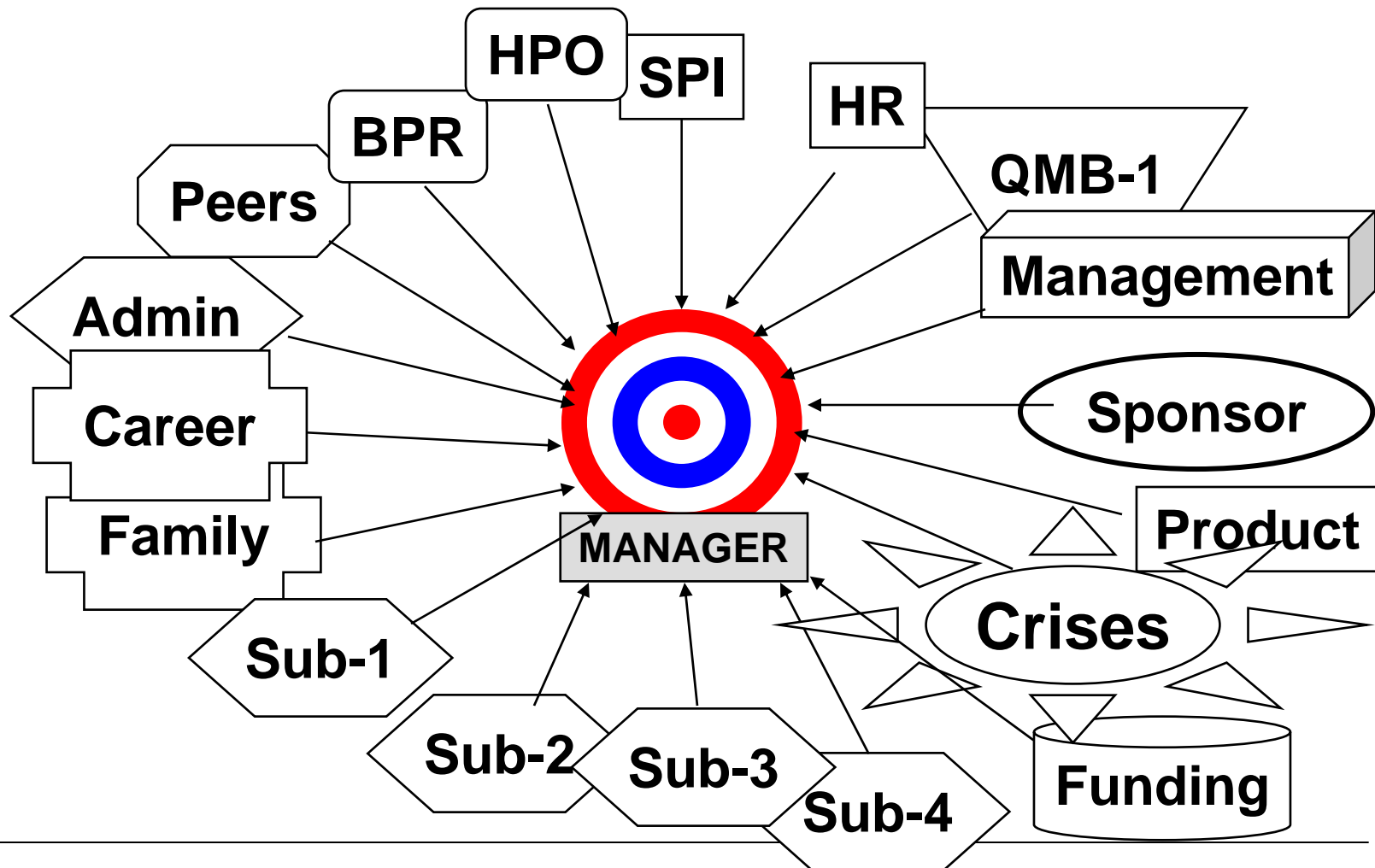


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# Process Group View of Communication with Managers



# But this is the Manager's view...



---

# Special Intelligence from the Women In Black



**BREAK**

---

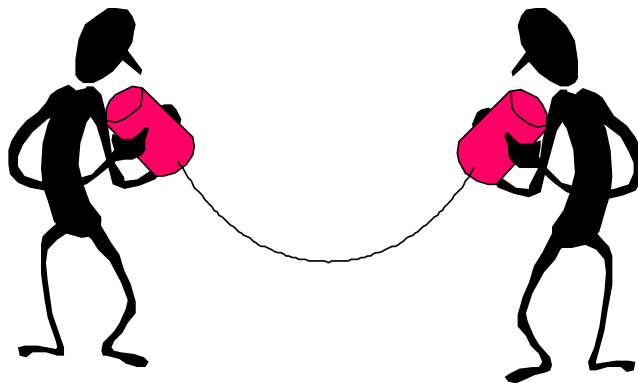
# Rejuvenate & Encourage



---

# What's the Secret to...

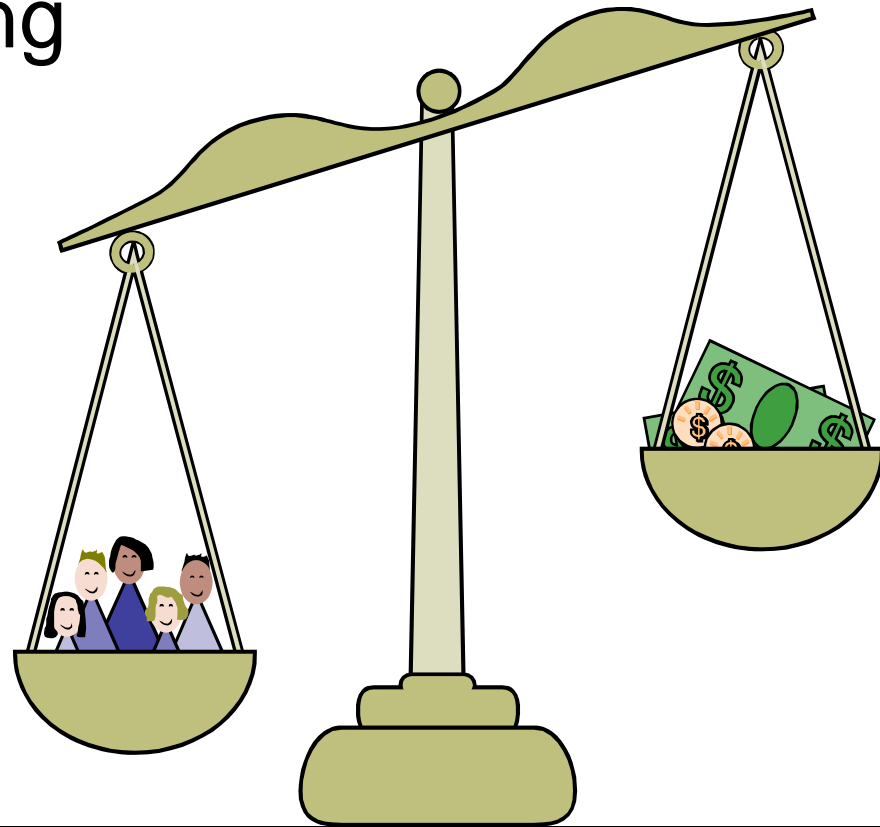
- ...dealing with the human element?
- ...getting people to listen to you?



---

# Dealing with the Human Element

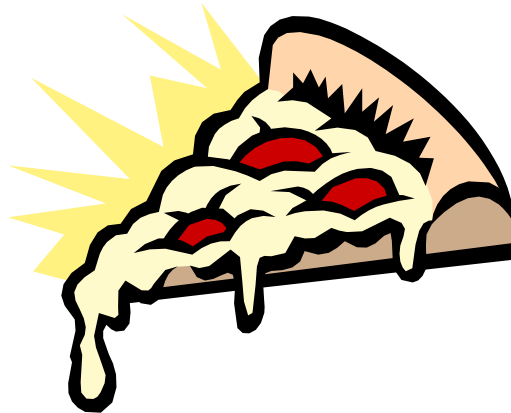
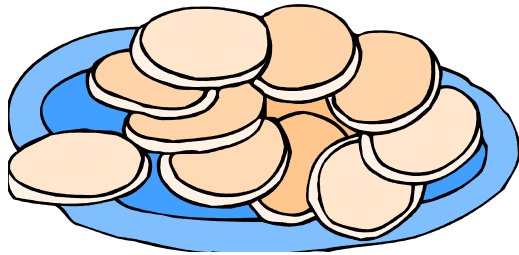
- Care and Feeding
- Peer Pressure
- Time Pressure
- Spirit



---

# Care and Feeding

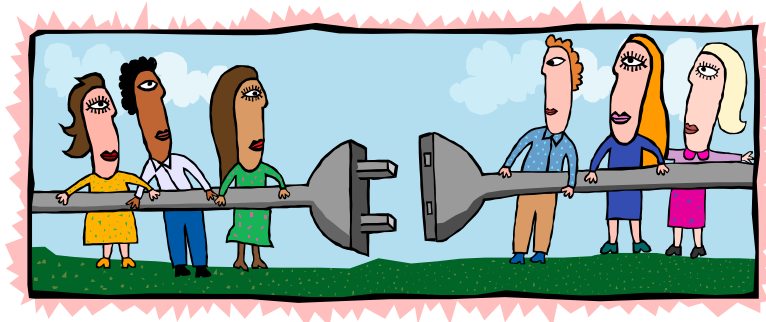
- Literally, “feeding” ...



---

# The Social Side...

- Rejuvenate people
- Interact as people



- Learn where everybody is coming from...
- Life history can color their ability to accept change
  - It could be something that happened 20 minutes ago or 20 years ago, you just don't know

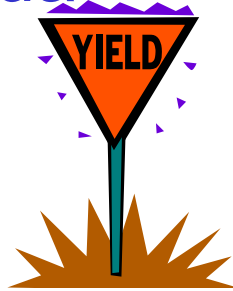


# Meeting Reminders



## Do:

- Be respectful of people's time
- Have an agenda and stick to it
- Watch body language
- Work the crowd
- Watch out for the strong silent type...



## Don't

- Be process fanatics
- Stick to the letter of the law
- Let the tools use you; you use the tools
- Forget to smile or laugh ...



---

# Handling Communication Breakdowns

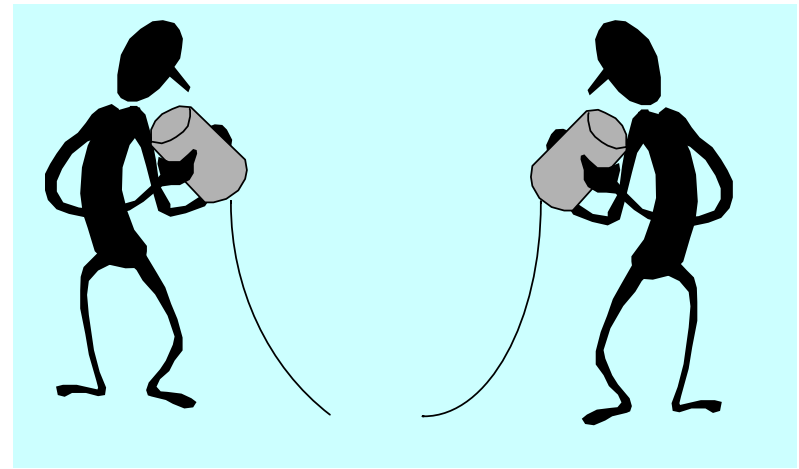
## Stand-up Meetings

(15 minutes, once around the room)

1. What did you learn yesterday?
2. What are you working on today?
3. What do you need help with, and who can help?

### Listen for:

- Requirements conflicts
- Schedule impacts
- Opportunities to save time and resources



---

# Process Reuse: a Learning Tool

- Rethink your goal
  - “How close to the finish line can I start?”
- Borrow with honor
  - shamelessly steal and edit process artifacts
- Find it Fast
  - It has to be easier to find than to reinvent



---

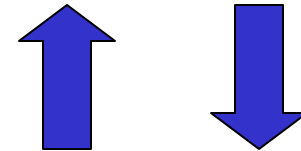
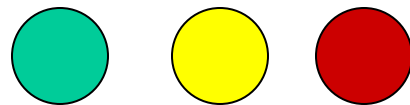
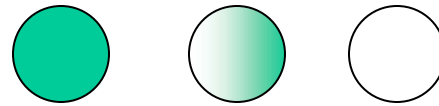
# Time Pressure

- Visual Charts



- If they don't get it in 10 seconds, they won't bother trying

- If it's too detailed, use highlighting or color to draw attention to the point



# TCM; Technology Watch – tracking technology visually

Architecture	Technology	Technology Type	primetime zone	impact on business	cost to implement
Yellow	XML	Data/Knowledge	1	1	2
	text analysis	Data/Knowledge	1	2	2
	data, analysis, decision support	Data/Knowledge	1	1	2
	content based retrieval	Data/Knowledge	2	1	3
	Brilliant content	Data/Knowledge	2	3	3
	Audio Mining	Data/Knowledge	4	3	3
Purple	Intelligent Agents	Data/Knowledge	1	2	3
	speech recognition	Input	2	2	2
	natural language processing	Input	2	3	4
	display technologies	Output	2	2	3
	digital ink	Output	3	3	4
	handwriting recognition	Input	2	2	3
	speech synthesis	Output	2	3	2
	wearables (embedded miniature computers)	Device	4	3	3
	Automatic Platform Adjustment	Transport/Connectivity	2	1	3
	Enterprise Portals	Data/Knowledge	1	1	2
Green	Voice Portals	Data/Knowledge	2	2	2
	Quantum Computing	Device	4	3	4
Red	Web tops	Data/Knowledge	2	2	3
	Linux	Device	1	1	1
	B2B Electronic Commerce	Application	1	1	2
	CRMs	Application	1	1	3
Blue	ASP's	Application	1	2	4
	Workflow engines	Application	1	1	3
	Wireless Web (WAP/WML)	Transport/Connectivity	2	1	2
	DSL/Cable modems	Transport/Connectivity	1	2	2
	Enterprise Directory/w LDAP	Access	2	2	3
	Digital Authorization	Access	1	2	2
	Biometrics	Access	2	2	3
	Smartcards	Access	2	2	2
	Voice over IP	Transport/Connectivity	1	3	4
	Bluetooth	Transport/Connectivity	2	1	2

---

# Props and Backdrops

- Little Books or Reference Cards
  - Purple Book Guide to SPI
  - ISO 9000 Reference Card
- CMMI Posters
- Wall Charts



---

# Iconize Your Spirit

- Give your team a name and graphic with meaning they can relate to



As Predictable as the Rising Sun...



Phoenix Rising from the ashes...  
Unsurpassed Excellence



---

# Put your whole body into it!

- Your presence makes a difference to project teams and process teams.
- When Executives show up, people are appreciative. It shows you care!



Some executives think:  
“They’ll think I’m  
interfering....”

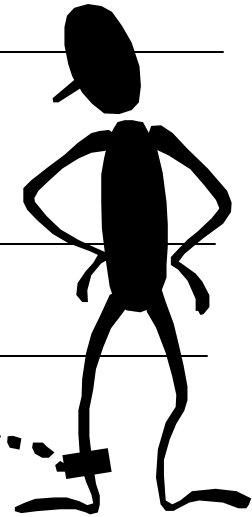
**Not**



---

# Feeling Stuck?

---



---

## Inside the Organization:

---

- Politics
- The Hurry Habit
- Boss-Subordinate Relationship
- Lack of Authority
- Walking out is not an option

## Inside of You

---

- Anxiety & Self-Doubt
- Delivering unpopular messages
- Juggling Workload
- Setting Parameters & saying “NO”

---

# Ground Rules for Contracting

1. Write down contracts.  
Most are broken out of neglect, not intent.
2. Contracts require specific time deadlines or durations.
3. Good contracts require good faith  
50/50 Responsibility
4. Social contracts are always renegotiable.  
If someone wants to renegotiate a contract midstream, be grateful they are telling you & not just doing it without a word.



---

# Contracting Expectations

You can ... 

...contract for behavior,  
but not for the other  
person to change  
their feelings

...say no – even to  
clients

...negotiate for what you  
want

All wants are legitimate –  
it is a birthright

You can't... 

...get something for  
nothing. There must  
be consideration on  
both sides

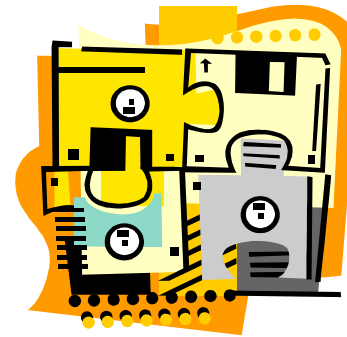
...ask for something the  
other person doesn't  
have, or promise  
something you don't  
have

...contract with someone  
who's not in the room

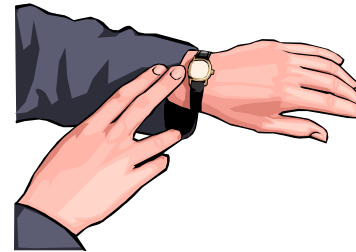
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# Problems and Why

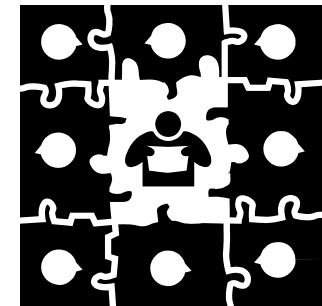
- **Analysis Paralysis:**  
Developers get caught  
in their own mental loop



- **No time for this SPI stuff:**  
Developers are  
Very Very Busy

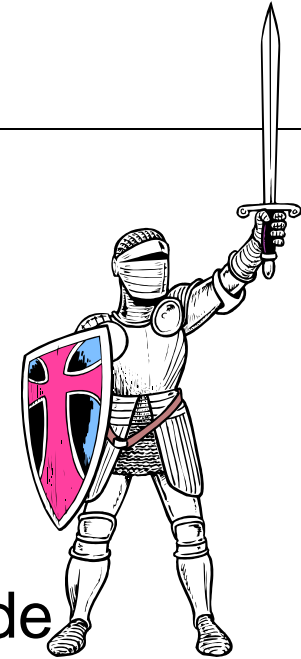


- **The Waiting Game:**  
Developers Play Follow the Leader



---

# Find the Leaders

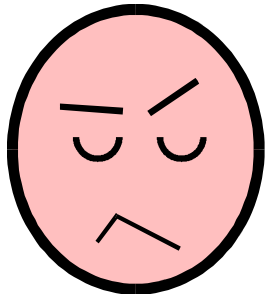


- Developers follow other Developers
  - Credibility of the Process Group Lead
  - Should be someone who developed code
  - Should be someone developers will not ignore
- Critical Mass of Thoughtshare is only 18%
  - Credibility of Development Champions
  - Select Champions out of the Development Pool from opinion leaders with respected opinions
  - Give them the knowledge; let them evangelize

---

# Insight about Buy-in

To get buy-in for improvement activities,  
sell results to executives, and  
sell needs to managers and developers



If you talk to executives about needs,  
you'll sound like you're complaining.

If you talk to managers and developers about  
results, you'll sound like you're out of touch with  
reality.

---

# Tailor Things to Fit New Situations



---

# How to Prevent Backsliding

## Meeting Agenda for Process Improvement

- Get the right people at the meeting and ask...
  - One thing the process Must Include
  - One thing the process Should NOT Include
- Ask for clarification, and edit
  - What did you mean by that?
  - Does everyone agree, or what should it be?
  - If agreed, adopt it, if no agreement, drop it
- Write the process using these points exactly

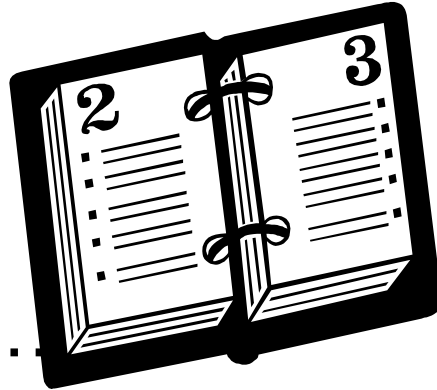




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# Simple Situation Analysis

Use a checklist or questionnaire with areas to focus discussion...



<b>Today</b>	<b>Tomorrow</b>
What do you do in this area today?	What do you want to be doing in this area in the future?

---

# A False Assumption that Hurts

- The “goodness” of requirements is a reflection of the goodness of the author
  - Good people write good requirements (Not!)
  - Bad people write bad requirements (Not!)

**FALSE!**

**VALUE JUDGMENTS  
ABOUT PEOPLE  
ARE HARMFUL TO  
YOUR HEALTH!**

---

# True Assumptions that Help

- There's no "Good and Bad People" here.
  - Only Excellent People work here.
  - Everyone is trying to do their best.

**EXCELLENT PEOPLE**  
**+ SCHEDULE PRESSURE**  
**+ HURRY HABITS**  

---

**= BAD REQUIREMENTS**

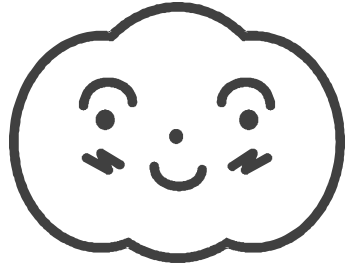
**EXCELLENT PEOPLE**  
**+ SKILLS & KNOWLEDGE**  
**+ COURAGE TO COGITATE**  

---

**= GOOD REQUIREMENTS**

---

# Warm Fuzzies and Solid Gold



Hopes & Wishes

Needs & Wants

Expectations

**Requirements**

Task Lists

Issues & Risks



Urgent Trivia

False Alarms

Problems & Bugs

Complaints

Concerns



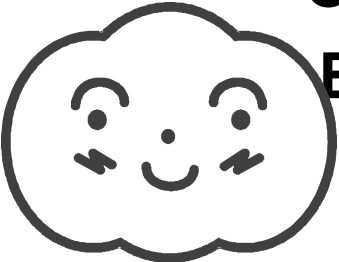

# Collaborative Arguments Us vs. Them

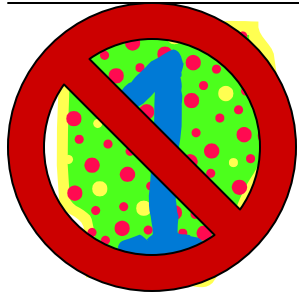


Product Management	Engineering/Realization
Do This	That's Wrong
What's wrong with it?	Not enough detail
Here's more detail...	That's design; that's my job, not yours
But that's what you asked for ...Do This	Oh well, I gotta go code now...

# Collaborative Negotiation Us Understanding It



Product Management	Engineering/Realization
 <p>Customer needs Business needs Target Market Window</p>	<p>Accuracy Ambiguity (not) Testability and Feasibility</p> 
<p>Work together to achieve clear understanding of what's required</p> <p style="text-align: center;"><b>Requirements</b></p> <p>Output: Requirements Drafts, Iterative Reviews</p>	



# The 4-Drafts Rule



- The first draft is always wrong.
  - So don't worry, and don't complain, expect it.
- The fourth draft is almost always right.
  - So plan to do 4 iterations, and expect improvement.

- Myth: Do it right the first time.
- Reality: “Have the courage to cogitate.”  
Think 4 times on requirements and design,  
to prepare you to code it right the first time.

---

# Effective Pattern and Rhythm

**Activity** → **Result**

1. Collaborative discussion first capture results in 1<sup>st</sup> Draft      50% right
2. Review and revise capture results in 2<sup>nd</sup> draft      75% right
3. Review and revise capture results in 3<sup>rd</sup> draft      88% right
4. Review and revise capture results in 4<sup>th</sup> draft      95%-100%



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# Before... Prepare Yourself

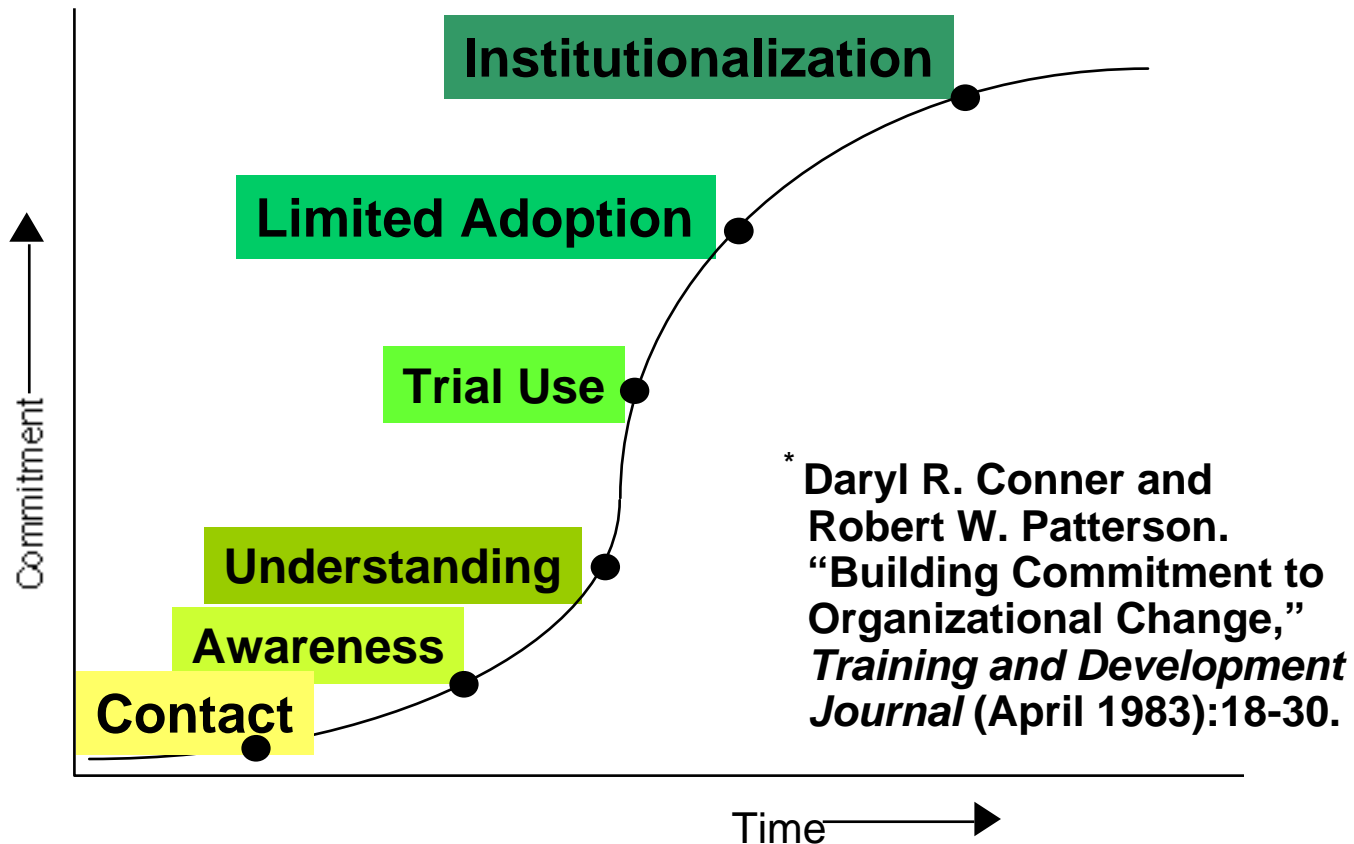
- Obtain training on **technology change management**
  - Applies equally to process improvement as it does to technology adoption
- Understand the **business objectives** of your executive
- Have an “**elevator speech**” ready
  - Don’t lose an opportunity to reinforce the message

***Your competence and credibility are key***

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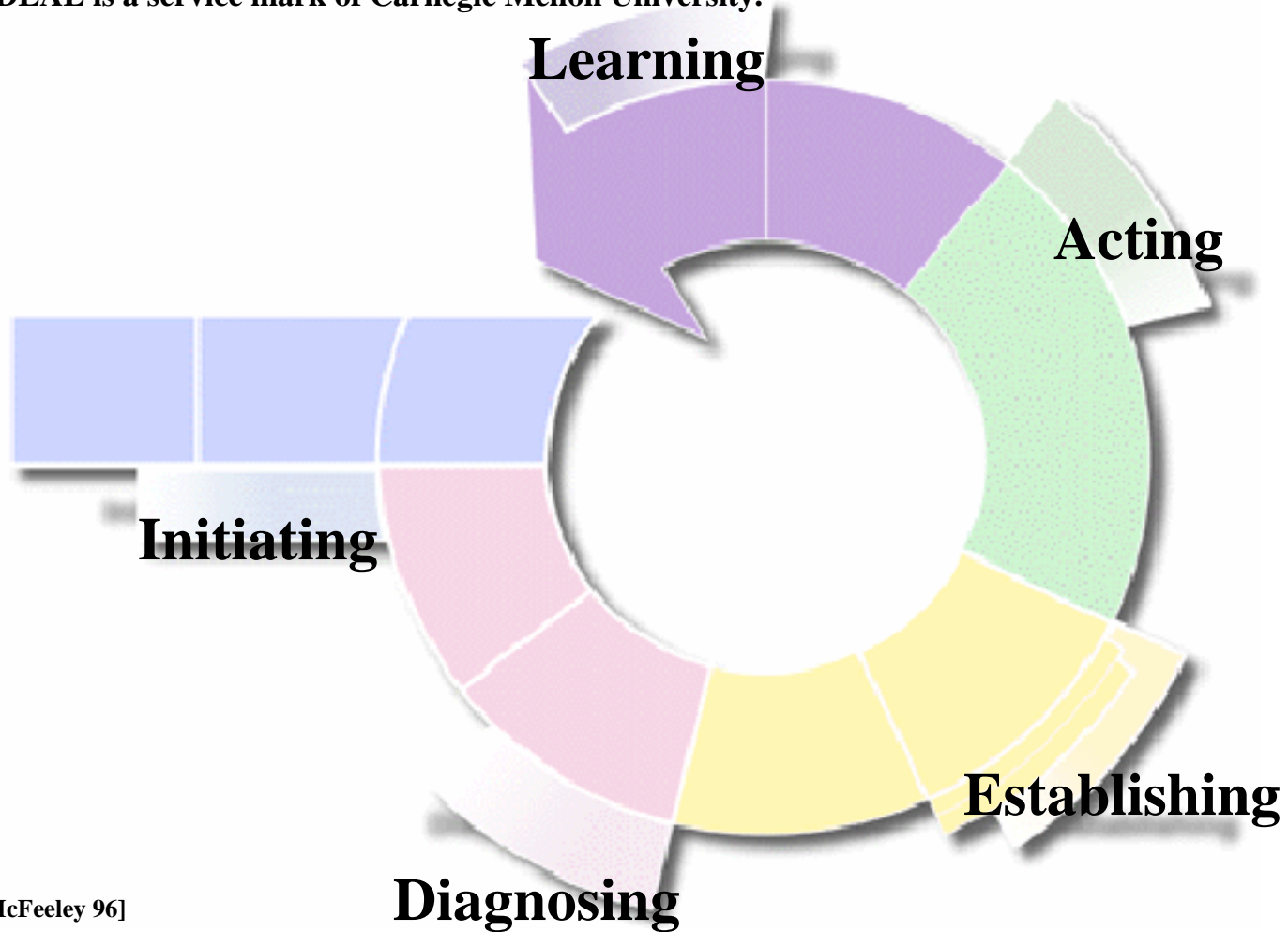
# Technology Change Management \*



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# The IDEAL<sup>SM</sup> Model

<sup>SM</sup> IDEAL is a service mark of Carnegie Mellon University.

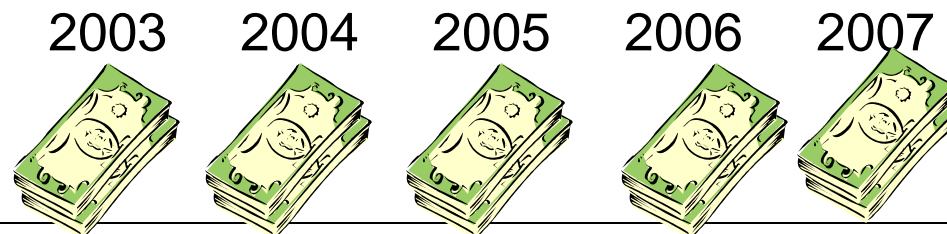
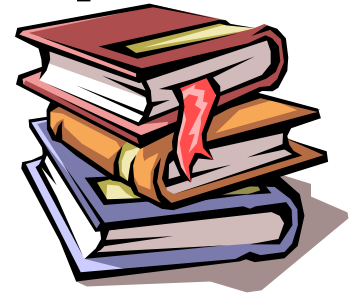


[McFeeley 96]

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# Initiating Phase - Sponsorship

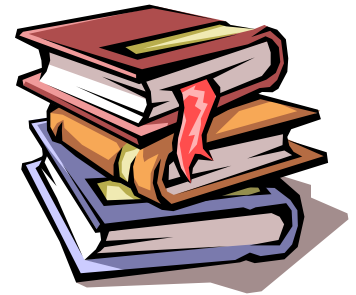
- **Educate** on SPI
  - Fundamentals, including the model, life cycle and principles of managing technology change
- **Align** process improvement objectives **with business objectives**
- Obtain **long-term funding** commitment



---

# Diagnosing Phase - Appraisal

- **Educate** on the appraisal



- Method, likely results (especially for initial appraisals), schedule template

- Clearly **identify sponsor actions**

- Appraisal plan approval, including project selection



- Active participation in appraisal (sponsor kickoff, interview, out-brief, action planning)

---

# Establishing Phase - Plans

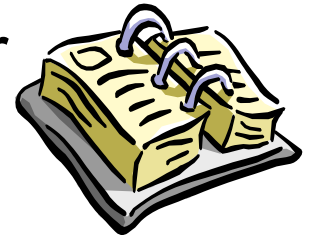
- Ensure plans include intermediate, ***measurable milestones***
- Establish top level ***“one chart” plans***
- Identify ***key resource dependencies***
  - Key people are always in high demand
- Plan to ***run process improvement as a project***
  - Identify WBS, cost/schedule, risks, etc.



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# Acting Phase – Actions and Status

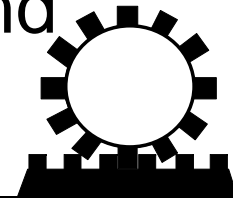
- **Provide quantitative** process improvement progress status **regularly** to the sponsor
  - Monthly meetings recommended
- **Refresh/remind** regarding required sponsor actions
  - Communications
  - Briefings
  - Recognition
  - Progress assessment



---

# Learning Phase – What’s Next?

- Communicate quantitatively *what will be improved* on the next cycle
  - Leverage lessons learned from our successes/failures and factor improvements into the next cycle
- Advertise completion of a “cycle” and what happens next





# The SECRET Decoding Chart

**NO** – NO time, no way

**SE** – Sell & Enlighten

**C** – Communicate  
Expectations Often

## *Loop Re-Entry Points*

• Get Managers to Support it

• Get Developers to Follow it

**R** – Reorganization

**SE** – Sell & Enlighten

• Get Executive Sponsorship

**MA** – This doesn't Apply to Me

**T** – Tailor things to fit  
new situations

• Get Champions Involved

• Learn From Experience

**L** – Will they ever Learn?

**RE** – Rejuvenate & Encourage

• Learn From Experience

---

# One More Secret: SPI Leadership



*“As for the best leaders,  
the people do not notice their existence.  
The next best, the people honor and praise.  
The next, the people fear,  
and the next, the people hate.  
When the best leader’s work is done,  
the people say, “We did it ourselves”.”*

Lao-Tsu, 6th Century BC

---

# Special Intelligence from the Women In Black

**QUESTIONS**

---

# References



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- Henderson, Bruce A. et.al., *Lean Transformation*, The Oaklea Press, 1999.
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