Learning from a great many sources: Summary of SEPG Conferences since 1988

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Standing on each other's shoulders ...

instead of stepping on each other's toes.
- Richard Hamming

Two audiences:

1. **New to SPI – What do I need to know to accelerate our progress?**

2. **Experienced – Did I do the right things?**

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Presentation full of opinions

- There is no such thing as an "objective look" into the past.
- My lens:
  - Implementation, deployment, technology transition, getting written/spoken practices into actual practice.
  - Looking for frameworks, models, explanations, "how" AND ALSO "why."
  - Looking for respectful ways of accomplishing implementation.
- Method of research
  - Tried to remember what impressed.
  - Looked at every Proceedings.

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Summary: if you can't stay for the whole presentation

- **Lots of repetition over the years:**
  - Themes
  - What surprised the speakers
  - Advice
  - Emphasis
  - What is unsaid, not emphasized

- **Little evidence of learning, except that people stopped attending.**
- **Almost no summarization, no sense-making, no frameworks.**

Summary (cont.)

- If what gets selected $\Rightarrow$ consensus, then there is strong agreement about what is important because nearly every SEPG Conference has been like the others. (OK, I have my favorites!)
- Perennials:
  - SPI in a (large) turbulent, geographically distributed environment
  - Level x in y years / z months; Aggressively achieving …
  - X lessons for (= practical/best way to implement) assessments, inspections, SEPGs, teams, sponsorship
  - SPI with no {money, resources, time, org}
  - Relationship among SQA, SEPG & SPI
  - Relationship among SPICE, CMM/I, PSP, TSP, Six Sigma, Lean, EIA, ISO/IEC, Agile, RUP, XP, PMBOK, IEEE
  - Selling SPI, business case/value, ROI, cost-effective X
  - Using {inspections, project, failure, quality/defect} data to drive SPI
  - Transitioning to X from Y (ISO/CMM, CMM/CMMI, SPA/CBA-IPI/SCAMPI, Software/Systems engineering/Everything else)

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Example perennial

Conducting Process Improvement
Well-Known Lessons Learned

To be successful in process improvement:

- Obtain management commitment
- Establish responsibility for process improvement
- "Achieve CMM Level X" should not be the goal
- Do not write thick process descriptions
- Involve practitioners (i.e. developers)
- Do not skip CMM levels
- Treat process improvement as a project

Telcordia
Technologies

Performance from Experience

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Slide – 4

From Eric Byrne keynote, Telcordia, SEPG 2001

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Notable summaries

1. "Special intelligence for SPI," by Kim Caputo, with Beth Gramoy, Joan Weszka & Rose Whitney. Thursday, March 10, 1:30 – 5:00 pm. Since SEPG 2002.
2. "Software process improvement in retrospective, lessons learned for software projects," John Vu, Boeing, SEPG 2004.
3. "SEPG retrospective: What experienced SEPG leaders would do differently," by Joan Weszka, with Beth Gramoy, Tony Jordano, Dana Roper & Gary Wigle. SEPG 2002.
4. "14 important lessons learned doing SPI in a rapidly evolving commercial environment," by Priscilla Fowler, Brian Middlecoat & Sung Yo, SEPG 1999.

- There are others.

Example from John Vu


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John Vu (cont.)

BOEING

Why Do So Many Improvement Efforts Fail ?

1. <u>Over-emphasize</u> on having assessment but not much focus on commitment to make improvement happen

2. Focus mostly on <u>maturity levels</u> without clear direction and measurable objectives

3. Lack of a <u>skilled infrastructure</u> to coordinate and manage improvement activities

4. <u>Confusion</u> between buzzword terminology and actual practices

5. Implementation of improvement solutions <u>poorly managed</u>

* Software Industry Benchmarking Study 2001

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John D. Vu
Retrospective 2004

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Some frameworks

General

Accurate   **Simple**
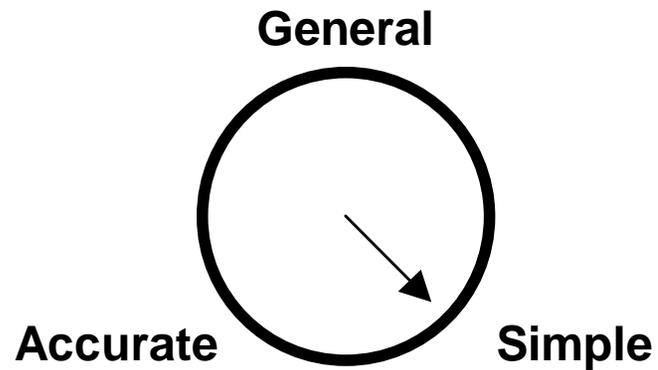
Thorngate's one-armed clock

Uninformed Certainty

Awareness

Understanding

Informed Doubt

Definition

Informed Certainty

Installation

Realistic Concern

Informed Doubt

Adoption

Informed Certainty

Institutionalization

Realistic Concern
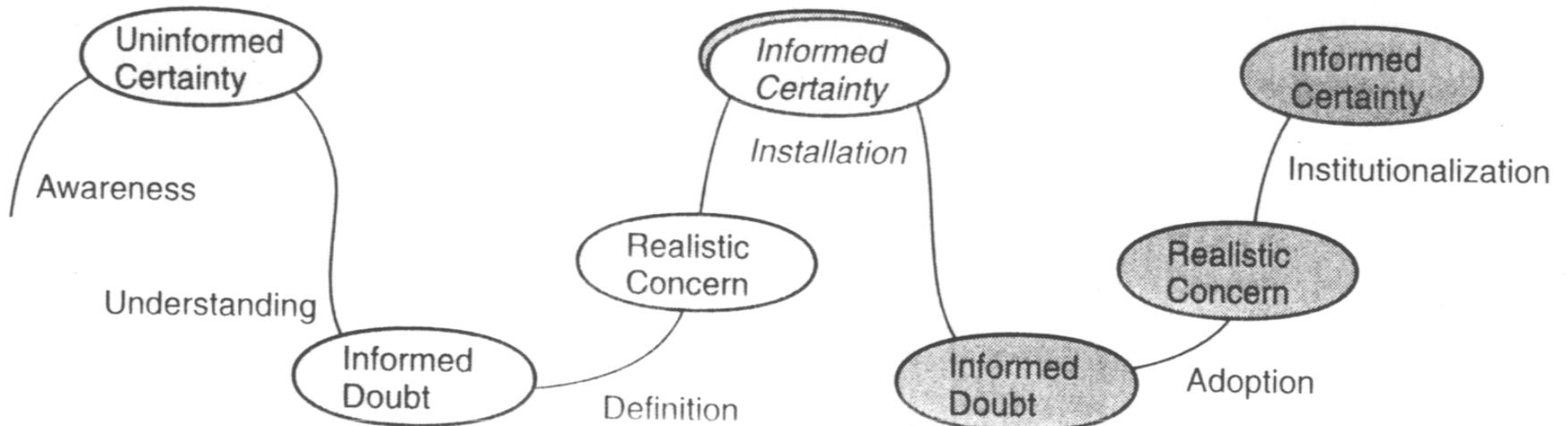
Caputo's "waves of change"

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Some more ...
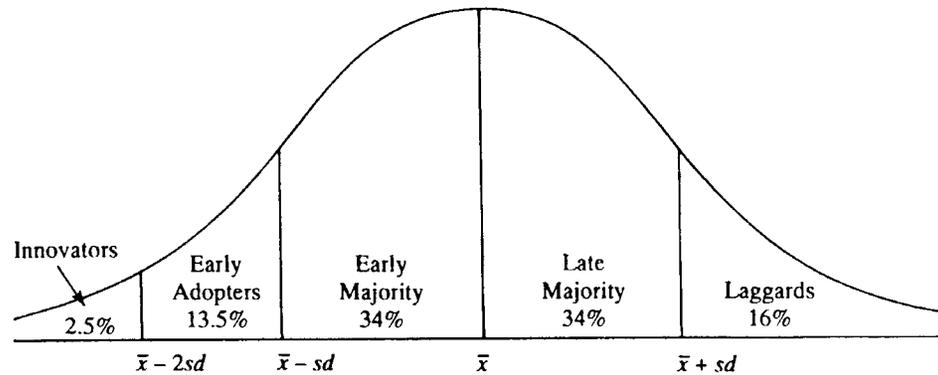
Rogers' adopter categories

| Innovators 2.5% | Early Adopters 13.5% | Early Majority 34% | Late Majority 34% | Laggards 16% |

Moore's chasm

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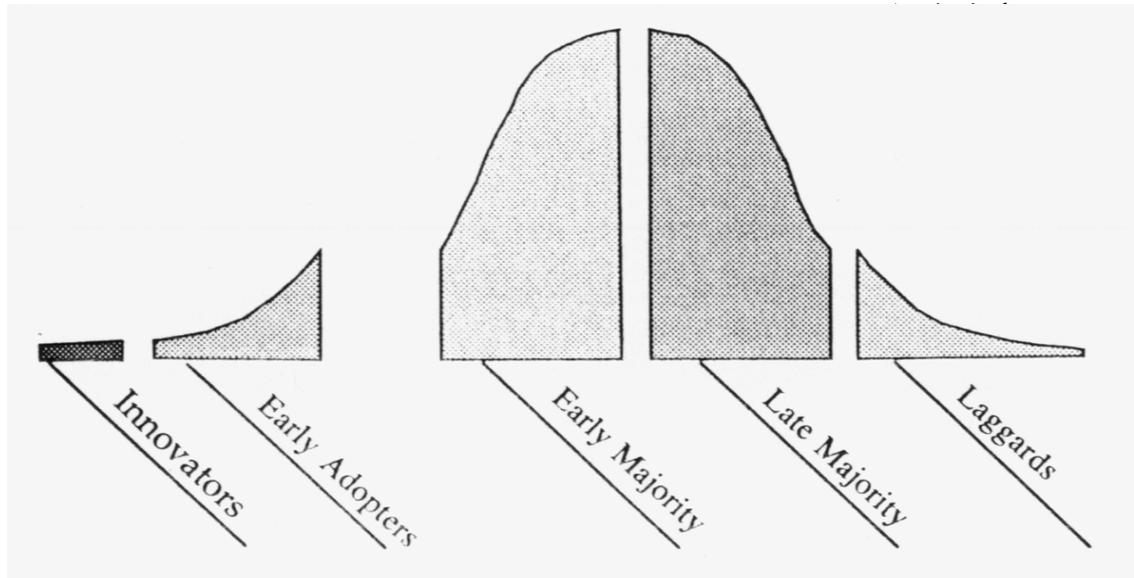
Results - General

- SEI: Need to strictly adhere.
- Audience: One size does not fit all.

Not asked: How many sizes are there? What size goes with which situation?

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Results - General

- SEI: If you disagree then you are disloyal, a resister.
- Audience: But we seem to really want to do it, just in a different style.

Not said: There may be good reasons to disagree & they might have nothing to do with resistance.

Not asked: What, really, is resistance? What is the place of disagreeing?

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Results - Assessments

- SEI: One, strict way. Except for SCEs.
- Audience: Look at all of the variations we found useful!
- SEI (later): Here are the few variations we authorize.

Not asked: What are assessments trying to optimize? What are the requirements for an *effective* assessment? Same as for a *successful* one?

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Results - Assessments

- SEI: Need strict control in order to control quality & outcomes.
- Audience: You sure? They seem so negative in the guise of being honest.

Not said: Publicly-presented evidence of assessment quality problems. Well, there was one presentation once, not at an SEPG conference. And the cover story in *CIO* Magazine.

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Results - Implementation

- Audience: Which is more important, the human side or the technical side?
- SEI: They are both important = we don't really know. Later, IDEAL.

Not asked: What is the interaction between human & technical sides? Is one more important under one condition or at one time and another at another?

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Results – Process Areas

- Audience: Are there some that are more important than others?
- SEI: No, they are all important = we don't really know.

One study: There is a natural progression of importance through the KPAs, there is "dominance."

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Executive management presentations

- Make business case.
- Set clear goals, measure & track.
- Align rewards to goals. Push down.
- Communicate, communicate.
- Experiment, pilot test.
- Bias towards action.
- Provide forum for successes.

Preparation for executive management presentations

- Speak the language of business = bottom line (financial) benefits.
- Document the results of a recent catastrophe (death march). Even a competitor's.
- Summarize.
- Ask for action, concrete next steps.

- That is, try to bridge the gap in communication styles between our linear, logical, technical one and management's action-orientation.

Small orgs, small projects

- Fixed tailoring that reduces the load & yet spreads it.
- Many:1 relationships between roles & belly buttons.
- Lots of checklists & templates. Heuristics. Fixed streamlining.

- Better approach, almost never presented -- Risk-driven SPI & PM: Not all small projects/orgs are created equal, some can have lots of risk (e.g., related to regulation, compliance). – SEPG 1996

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Approach to SPI

- Executive level sponsorship.
- Assessment to start.
- Action items out of assessment.
- Initial excitement.
- Falls on its face after several months, after the reality sinks in.
- Writes a paper on sustaining momentum.

Better approach

- Got coaching.
- Planned the technical AND the human side.
- Used best people, not just who's available.
- Linked initiative to the best aspects of the current culture.
- Consciously managed meetings & built teams.
- Included enough detail to meet all KPA goals.
- Managed SPI as a project.
- Tied to business goals, business concerns & measures.
- Involve (middle) managers. Gave them goals & required line items for SPI in budgets.
- Addressed KPA integration.
- Responded to organization changes. – SEPG 1999

What is often not mentioned

- **Integration is 10X harder than individual KPAs.**
- **Involvement is more important than information.**
- **Involvement (= action) should be the ticket for inclusion. Find & recruit champions.**
- **Action is more important than planning.**
- **Surviving organizational realignments is a #1 priority. Consider taking the SEPG off of the org chart. If your job is presenting slides, you have sinned.**
- **Why SPI is important & urgent is not a given.**

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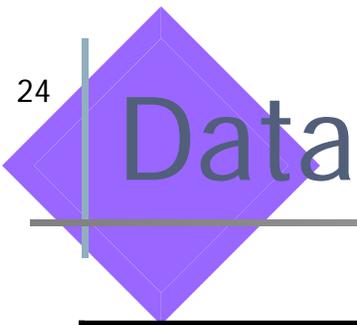
Data

Accepted	Counter
Cannot skip levels. – SEI	Can start at Level 3. Quality plan = business plan. – Motorola India, 1997
In order to show commitment, must work on all KPAs all at once. – SEI	There is a natural order. Working on too many KPAs predicts failure. – "What do you do first? What do you do next?" Pacific Bell, 1996
Prevent SPI back-sliding. – SEI	Expect back-sliding & accelerate it. It's a normal part of any large, new initiative. – Caputo, 1997
Family dynamics explain human side of change. – Weinberg, 1992, McLendon, 1997	Families depend on roles. Family roles are not predominant in organizations. – Me, 2002
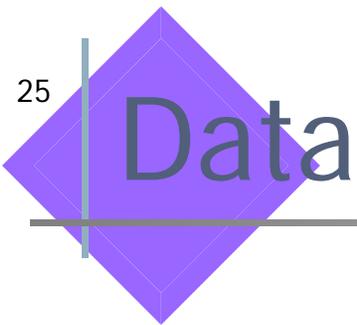
Data

Accepted	Counter
SQA should be independent. – SEI	SQA must be integrated. – HP, 1997
Must have executive sponsorship. – SEI	Programs were of, for & by middle managers. – HP, Pacific Bell, Tektronix, 1997
In order to be recognized as valuable, the SEPG should be prominent on the org chart.	In order to survive reorganizations, the SEPG should be an informal org. – AT&T, 1988; Westinghouse, 1989
SEPG has important, non-delegable functions. – SEI	The functions can be distributed, as long as they are all covered. – CSC, 1992

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In sum …

- Lots of repetition, <u>very</u> consistent messages, almost no comparisons.
- Failures are acknowledged – some.
- Little advice on fitting others' experience to yours.

SEPG conferences

- 1988 – Pittsburgh, Pennsylvania (46)
- 1989 – Pittsburgh, Pennsylvania (64)
- 1990 – Reston, Virginia (94)
- 1992 – Tyson's Corner, Virginia (195)
- 1993 – Costa Mesa, California (536)
- 1994 – Dallas, Texas (922)
- 1995 – Boston, Massachusetts

- 1996 – Atlantic City, New Jersey
- 1997 – San Jose, California
- 1998 – Chicago, Illinois
- 1999 – Atlanta, Georgia
- 2000 – Seattle, Washington
- 2001 – New Orleans, Louisiana
- 2002 – Phoenix, Arizona
- 2003 – Boston, Massachusetts
- 2004 – Orlando, Florida