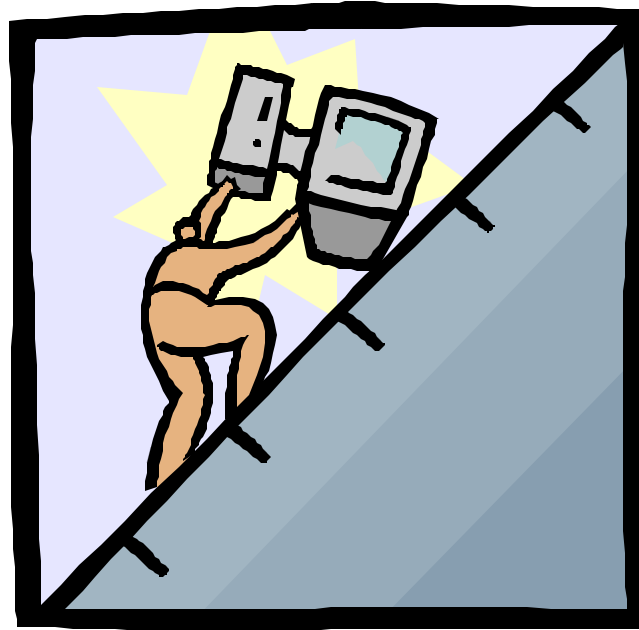

SEPG 2000 Conference Moving to Level 4



Why Move to Level 4

- The Process is your business advantage
 - we all hire from the same talent pool
 - we buy the same tools
 - therefore the competitive advantage is your own process
 - business performance = process performance
 - business capability = the process capability
 - therefore you must reduce the process variation
- Question: Do you have a process that can deliver the product your customer wants on-time
 - Level 3 answer = Don't know
 - Level 4 = Yes

The Goals

- (SQM Goal 2) Measurable goals for software product quality and their priorities are defined.
- (QPM/SQM Goal 1) The project's quantitative process management and software quality management activities are planned.
- (QPM Goal 2) The process performance of the project's defined software process is controlled quantitatively.
- (SQM Goal 3) Actual progress toward achieving the quality goals for the software products is quantified and managed.
- (QPM Goal 3) The process capability of the organization's standard software process is known in quantitative terms.
- (QPM Goals 1, 2, 3; SQM Goals 1, 2, 3) Institutionalization of the level 4 process

What is Level 4 all about ?

- Your managers can talk about historical data
- Data management goes back to the projects
 - projects are relying on trending information
- You have a constant stream of data and you can distinguish the signals from the noise
- You have defined a set of product lines to establish a “process capability baseline” e.g. “classes of processes”
- At Level 4 you are finding special causes of variation and reducing them
- At Level 5 you are getting rid of the common causes

Assessment - Things to look For

- Can the organization demonstrate actual business benefit (improvement trends)? --Results
- Which “critical processes” are being (or not being) quantitatively managed>
- Are these processes being measured and controlled at the process step level?
- Is the day-to-day decision making based on quantitative analysis (where appropriate)?
- How are quality goals prioritized and conflicts resolved?
- Have the quantitative management practices been in place for 6-8 months (institutionalized rule-of-thumb)?
- Organizations should demonstrate at least a pilot use of rigorous statistical techniques

Are You Level 4 ?

- How have you related your business objectives to your measurements
- Can you identify which modules going into test will have the high defect density?
- Which types of statistical control charts do you find most effective?
- Which critical processes did you decide to measure first?
- Do your executives want quantitative control?
- Do your managers want to be able to predict?
- Do your developers care about the numbers?

Summary of Changes at Level 4

- Level 3
 - process capability unknown
 - defined processes
 - manage by milestone
 - correct at status report
 - control progress vs. plan
- Level 4
 - process capability known
 - predictable processes
 - manage by numbers
 - correct immediately
 - control process performance

Controversy

- Significant debates as to what is needed to be assessed at Level-4
- Few high maturity orgs existed when the SW-CMM was written
- Most high maturity orgs were initially assessed with a relaxed interpretation of level 4
- Do you have to use Statistical Process Control when all the CMM discusses is quantitative management?

Level 4 Paradigm

