

CMMI Contenders, CMMI Pretenders

**CMMI Technology Conference & User Group
12-15 November 2007**

Rick Hefner, Ph.D.
Director, Process Management
Northrop Grumman Corporation
rick.hefner@ngc.com

Background

- **There is a marked difference between organizations that truly want to implement CMMI[®], and those who are simply try to get a “certificate”**
 - Contenders invest time and energy on understanding the industry best practices in the model, fitting them to their projects and organization, and improving their effectiveness and efficiency
 - Pretenders simply do enough to convince an appraiser to give them the maturity level -- along the way, they de-motivate their staff with bureaucratic processes, disappoint their customers with inconsistent performance, and generally give the model a bad name.



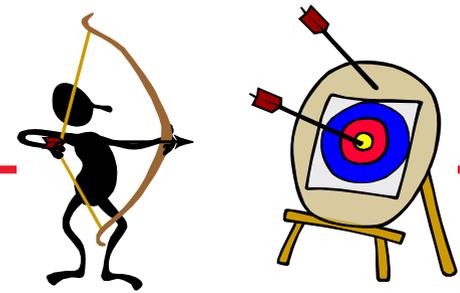
Background - 2

- **This presentation will take a critical look at the difference in how contenders and presenters approach improvement**
- **The observations are useful to:**
 - Customers trying to decide whether a potential contractor is a pretender or contender
 - Well-meaning organizations which may be inadvertently encouraging pretender behaviors.

Topics

- **Goal setting**
- **Training and awareness**
- **Customer engagement**
- **Organizational support**
- **Appraisals**

Goal Setting



Contenders

- Set realistic improvement goals after an initial appraisal, based on business goals and an investment/return strategy
- All projects participate in the improvement effort – “if it’s good for anybody, it’s good for everybody”.

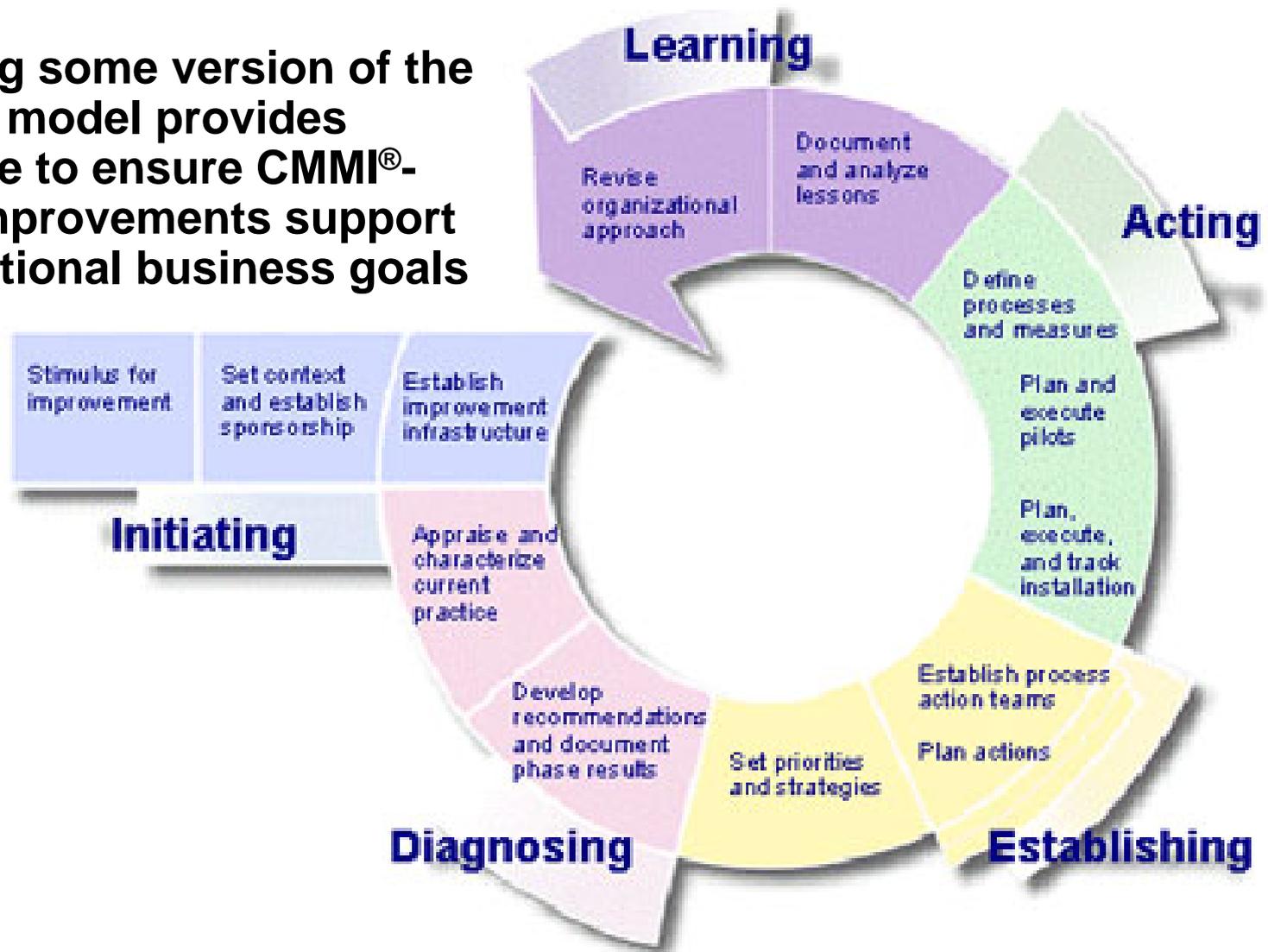
Pretenders

- Generate a slogan “Level X in 2007”, without any idea or what it will take to get there, or how much senior management is willing to investment
- In fact, senior management may not be willing to invest anything, encouraging the staff to “improve on their own time”
- When senior management realizes the goal is too aggressive, they limit the improvements to a few “cherry-picked” projects.



The IDEALSM Model

Following some version of the IDEALSM model provides discipline to ensure CMMI[®]-based improvements support organizational business goals



"IDEAL: A User's Guide for Software Process Improvement," Robert McFeeley, Software Engineering Institute, CMU/SEI-96-HB-001

True Business Goals

- Shortened time to market
- Promotion of growth
- Improved product quality
- Reduced development costs
- Readiness for business change

Achieving a maturity level may reflect a business goal to remain competitive, but focusing on that sends the wrong message

Underlying Principles of CMMI®

- 1. Process discipline leads to predictable project performance**
 - Say what you do; do what you say
 - Document the plans/processes
 - Communicate them to the performers and stakeholders
 - Audit to ensure we are following them

- 2. Conscious choices lead to better processes**
 - E.g., identify relevant stakeholders and their involvement; identify work products to be controlled and the control method; define validation procedures and criteria, ...

- 3. Organizational learning improves project performance**
 - Capture what works, and what doesn't
 - Make rules (policies) to guide projects
 - Define expected processes, and let projects tailor them to fit
 - Capture work products and measures, and learn from them

Reference: "Interpreting the CMMI: It Depends!", R. Hefner and S. Yellayi, 2005 CMMI Technology Conference and User Group

How Do the CMMI[®] Practices Add Value

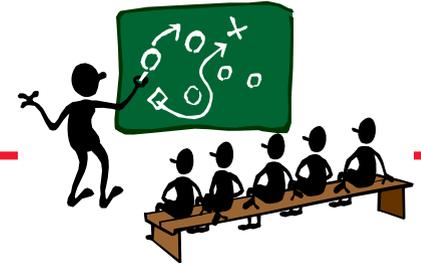
- **Each practice provides value in 3 possible ways:**
 - **Performance** – the practice directly reduces cost and or schedule through either increased efficiency, increased effectiveness, or lowered rework
 - **Quality** – the practice produces higher quality products, by either preventing or uncovering defects
 - **Communications** – the practice helps everyone understand expected behavior, or provides insight leading to better decisions
- **Many practices effect more than one dimension**
- **Some practices provide the potential for a positive impact or reduce the risk of a negative impact**

*Rick Hefner, "How to Explain the Value of Every CMMI Practice"
2007 CMMI Technology Conference and User Group, Wed, 11:00 am*

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Training and Awareness



Contenders

- Realize that improvement means learning how to implement new practices, and training is key
- Invest heavily in explaining how to implement the new practices, and why they add value

Pretenders

- Simply tell the staff to do it, “because the CMMI® says so”



Strategies for Organizational Training - 1

- **Start by defining the key job functions in the organization**
 - E.g., project manager, software engineer, quality assurance specialist
- **Identify the requisite knowledge associated with each function**
- **Define a set of course modules that impart this knowledge**
 - Map modules to job functions
 - Some modules will be common to multiple job functions
- **Acquire training materials and trainers**
 - Should reflect the organization's policies and processes
 - Unlikely that standard vendor/university courses will fit
- **Ensure all the CMMI® process areas are addressed**
 - Knowledge needed to perform the process, NOT a course about the CMMI® requirements for that process area
 - Include performers of the process, and supporters of the process



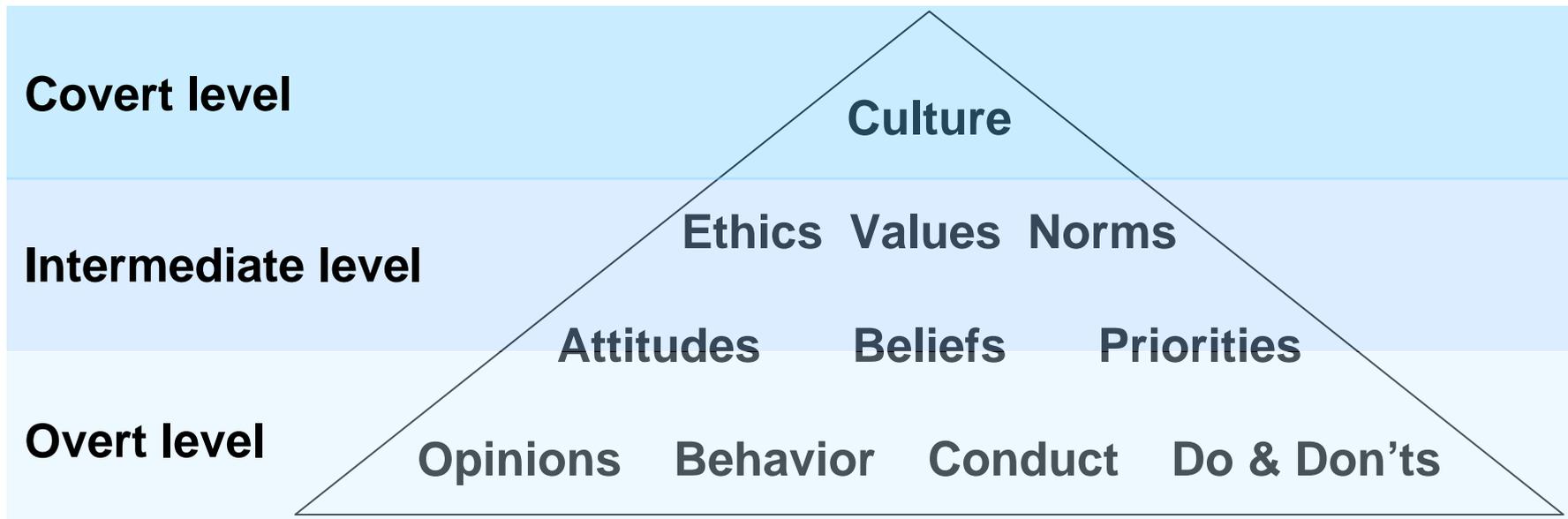
Strategies for Organizational Training - 2

- **Identify each employee by their job function(s), map to required courses**
 - If the employee already has the identified minimum knowledge, they do not need to take the course
- **Establish student records**
 - Who has completed what course, waivers
- **Review required training with employees**
 - Career-planning, promotions, new hires
- **Where additional project-specific training is required (e.g., tools, methods), adopt a similar approach at the project level**
 - Project Planning SP 2.5 addresses project specific training



Communications Must Address the Underlying Beliefs

- **Sponsors and performers must have a strong vision of the desired culture**
 - What are my roles and responsibilities?
 - What changes in behavior are required?
 - What are the underlying beliefs and values?
 - How do I benefit – WIIFM?

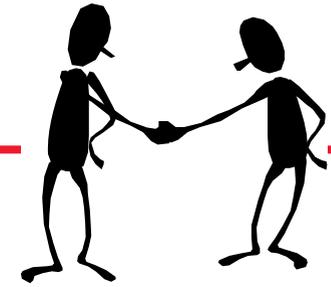


Key Messages (or Develop Your Own!)



- **Achieving and maintaining mature processes is essential to meeting our business goals**
 - Predictability, performance, quality
- **CMMI® involves short-term investment for long-term gain**
- **CMMI® is an enabler (not a guarantee) of project success**
 - Other aspects (people, technology, customer relationship, etc.) are equally important
 - The value is often risk reduction (which may be difficult to measure)
- **CMMI® is a set of proven, industry best-practices**
 - Adoption is about learning how to apply these practices to our work
 - The practices may feel awkward and have limited value until we learn them
 - It's OK to make mistakes – we will get better over time
- **When the entire organization is behaving maturely, everyone's job becomes easier**
- **Continuous improvement is a way of life**

Customer Engagement



Contenders

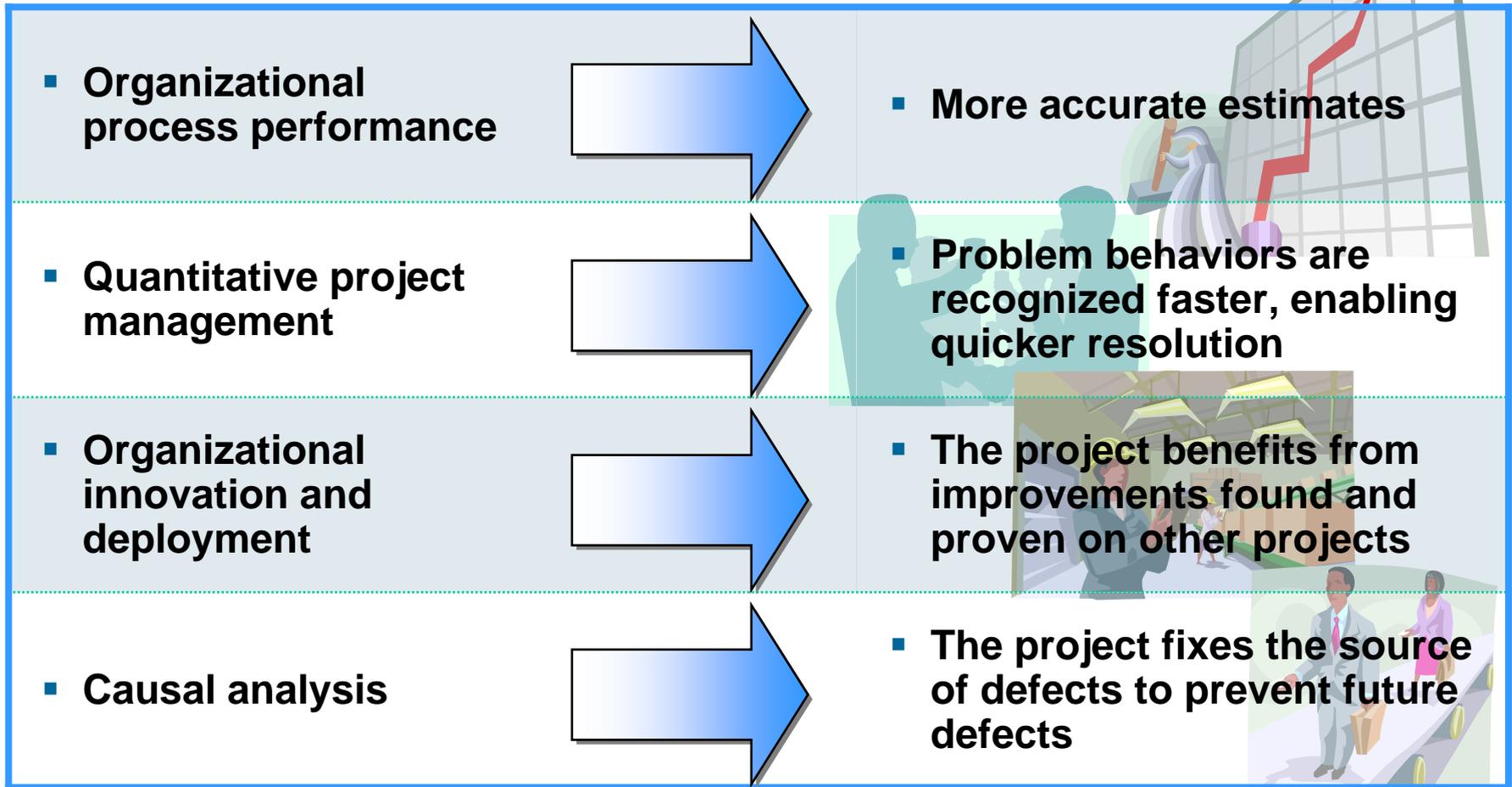
- Know that process improvement is about short-term investment for long-term gain
- Engage with their customers, by explaining the benefits CMMI® will provide, the timeline needed to see those benefits, and the improvements to be taken
- Enlist their customer's help in identifying issues that CMMI® can address

Pretenders

- Attempt to fly “under the radar”
- When the extra burden of work starts to impact project schedules and budgets, practitioners often blame “that CMMI® stuff” for their inability to meet project objectives



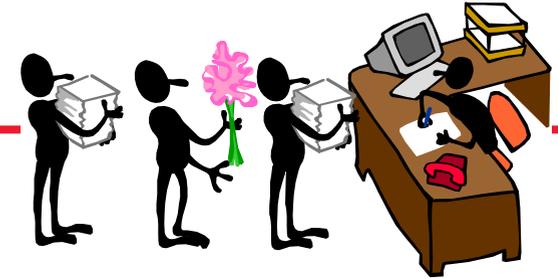
How Does Level 4 & 5 Benefit the Customer?



Better Products and Services Produced Faster And Cheaper

Rick Hefner, "How Does High Maturity Benefit the Customer?," Systems & Software Technology Conference, 18-22 April 2005

Organizational Support



Contenders

- Fully support the CMMI[®]-based improvement program by providing training, templates, tools, process assets libraries, measurement repositories and other work aids focused on improving the ability of practitioners to competently adopt the model

Pretenders

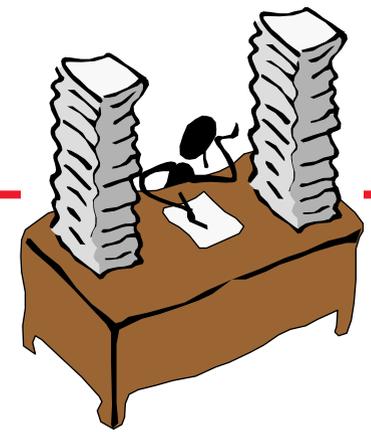
- Largely ignore organizational support, often to save money
- Where required by the model, they establish process asset libraries and measurement repositories, but they are largely shelfware



Management Commitment and Support

- **Understands the key messages**
- **Is willing to take actions to reinforce them**
- **Provides resources to support/sustain process improvement efforts**
- **Sets expectations that essential project functions will be funded and processes will be followed**
 - Project planning, estimation, tailoring, CM, QA, etc.
- **Supports process improvement and sustainment, rather than passing appraisals**
- **Rewards mature processes development and sustainment rather than individual heroics**
 - Tell me how you will reward me, and I'll tell how I will behave

Appraisals



Contenders

- View appraisals as money well-spent in measuring the maturity of their processes, identifying improvements, and building buy-in
- Often appraise other aspects than simple model compliance, such as process effectiveness and efficiency
- Ensure that all projects within the organization participate in the appraisal, to reinforce the use of mature processes, and to ensure all customers receive the benefits of that maturity

Pretenders

- Often only adopt CMM on a subset of their projects, also severely limit the percentage of projects that they appraise
- Scope the work to what they think will pass, not what is best for the business.



Appraisal Inaccuracies

- **Methodology**
 - SCAMPISM A appraisals provide highly accurate appraisal results
 - SCAMPISM B, C, and other appraisal methods may be useful, but they are not designed to provide the same accuracy
- **Appraiser skill**
 - There is wide variation in appraiser skill, experience and insight
 - Although appraisal experience is a crucial contributor to accuracy, the appraisal methods do little to ensure sufficient experience – method, type of organization
 - There is wide variation in how the model is interpreted, even among experienced lead appraisers
- **Appraiser independence**
 - Appraiser independence is needed to ensure unbiased results
 - It is difficult to establish a completely independent situation

Summary

- **There is a marked difference between organizations that truly want to implement CMMI[®], and those who are simply try to get a “certificate”**
- **By discussing the differences, we hope to help the CMMI[®] community the true value of CMMI[®]**

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