



Model - Appraisal Method Interactions

CMMI Users Group Conference

November 17, 2004

Jack Ferguson, SEI
Mike Konrad, SEI

jrf@sei.cmu.edu
mdk@sei.cmu.edu



Topics

Not Applicable – Process Areas, Goals and Practices

Alternative Practices

Compound Practices



Not Applicable PAs

What CMMI says - Model Tailoring Section

- “Process areas, in some circumstances, may be determined to be “not applicable” if the process area is, in fact, outside the scope of work. An example of a process area that might be excluded from an appraisal using a staged representation would be Supplier Agreement Management...”



Not Applicable PA Example 1- SAM

Supplier Agreement Management (SAM) is the most often excluded Process Area, however:

- SAM isn't just for products and product components that are delivered to the project's customer, it should also be used for the acquisition of any significant products or services used by the project.
- SAM applies to internal suppliers also, where there is a formal agreement or where there SHOULD BE a formal agreement, e.g., MOU or MOA
- Judgment about whether to include SAM or not should be based on the risk to the project of the acquired product or services, no matter the source.



Not Applicable PAs Example 2 - VAL

“My customer does the product testing, so VAL is Not-Applicable, Right?”

WRONG. When complexity and development risk are high, validation is best carried out through the development, including validation of requirements (RD SP3.5), of the design, and of selected product components before product integration. This may include simulations or prototypes to gain customer feedback on the acceptability of the proposed final product.



Not Applicable – The Bottom Line

CMMI V1.1 Models allow PAs to be excluded,

HOWEVER,

- This decision must be made considering the PA goals and practices compared with the organization's scope of work. If one or more projects perform the practices of a PA, it should be included.
- Feedback provided to the SEI must contain adequate rationale for each PA excluded.

Goals in applicable PAs can never be excluded.

Practices considered not applicable must be addressed through alternative practices...



Alternative Practices

What CMMI says - Model Tailoring Section

- “...appropriate alternative practices may be substituted for specific practices and/or generic practices if the alternatives are effective in implementing and institutionalizing the goals.”

What CMMI says – Glossary

- A practice that is a substitute for one or more generic or specific practices contained in CMMI models that achieves an equivalent effect toward satisfying the generic or specific goal associated with model practices. Alternative practices are not necessarily one-for-one replacements for the generic or specific practices.”
- TS SP 1.1 2nd sentence before Typical Work Products



Specific Practice Examples

SAM SP 2.1 Review candidate COTS products to ensure they satisfy specified requirements that are covered under a supplier agreement.

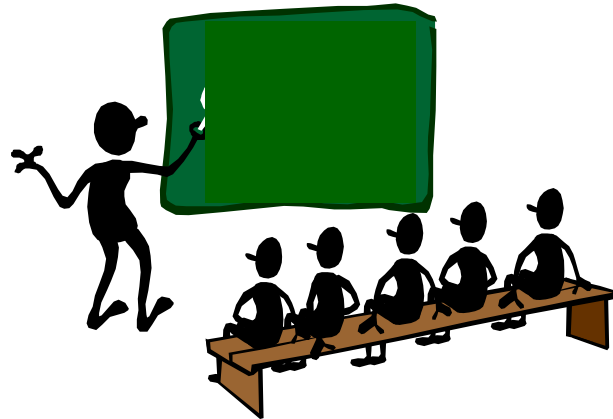
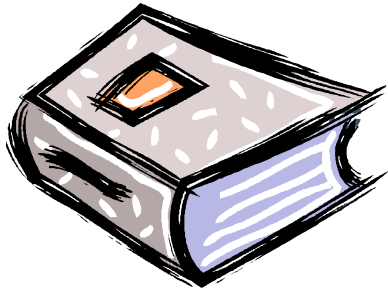
- “In the event COTS products are desired...”

TS SP 1.2 Develop alternative solutions and selection criteria.

- “... The circumstances in which it would not be useful to examine alternative solutions are infrequent in new developments. However, developments of precededented product components are candidates for not examining, or only minimally examining, alternative solutions.”



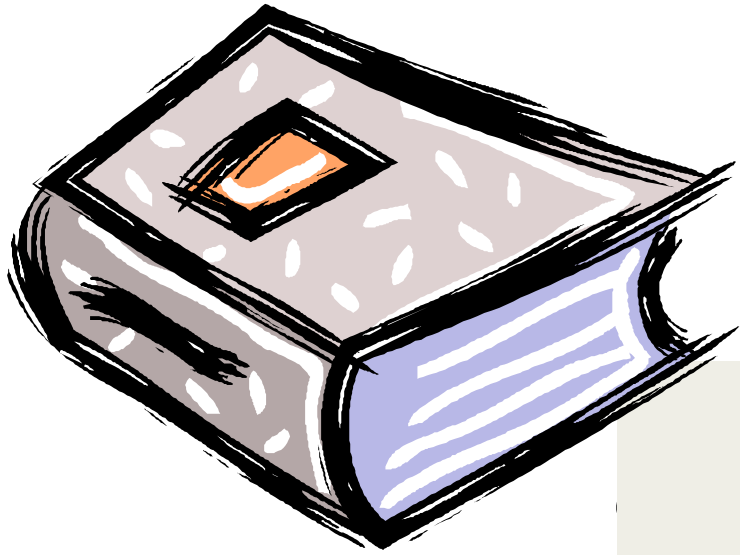
Data Collection, As Taught



Do the model practice and the implemented practice match?



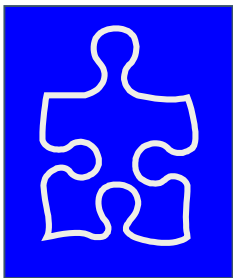
Data Collection in the Real World – Mapping to the Model



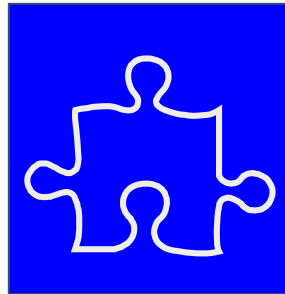
Is the practice covered
by the pieces found?

Mapping the Model to the Real World

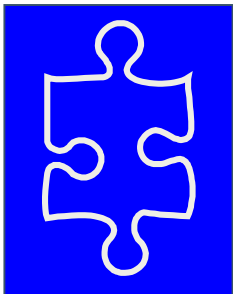
CMMI Structure



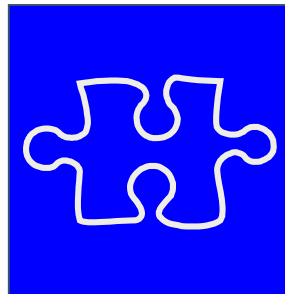
SP 1.1



GP 2.1



SP 2.2



GP 2.7

Integrated Business Structure





Compound Practices

Examples

PP SP 1.1 Establish a top-level work breakdown structure (WBS) to estimate the scope of work.

RSKM SP 1.1 Determine risk sources and categories.

REQM SP 1.4 Maintain Bidirectional Traceability among the requirements and the project plans and work products.

VER SP 2.3 Analyze data about preparation, conduct, and results of the peer reviews.

GP 3.2 Collect work products, measures, measurement results, and improvement information derived from planning and performing the <X> process to support the future use and improvement of the organization's processes and process assets.



Some Principles Concerning Practices

- Practices that include reasons or impacts do not require evidence the impact occurred. (PP SP 1.1)
- Practices that clearly have multiple states require evidence for each state. (RSKM SP 1.1)
- For other cases, CMMI is written at a higher level of abstraction than some other models, and has numerous places where practices could be applied to the extreme. Appropriate judgment must be applied to determine reasonable evidence for practice implementation. (REQM SP 1.4, VER SP 2.3 and GP 3.2)