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CMMI-based Business Analysis Used to Support CMCI Huntsville Pilots

A technique for connecting organizational issues
with CMMI Process Areas

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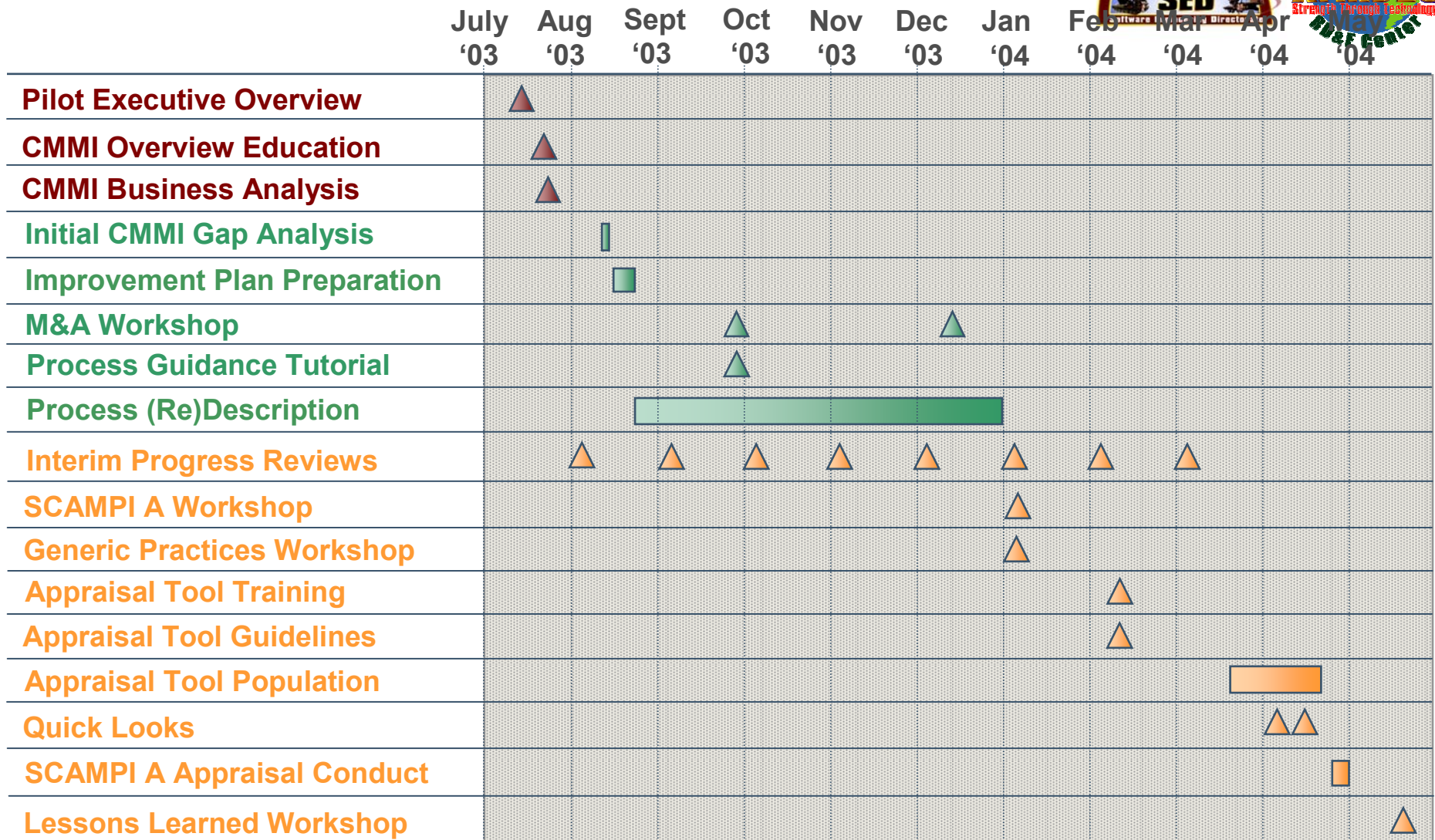
Pilot Project Overview

A joint project performed by the partnership between the Software Engineering Institute (SEI) and AMRDEC SED to establish the **technical feasibility** of developing guidance and other special-purpose transition mechanisms to support adoption of CMMI by **small and medium enterprises** (25 to 250 employees in Huntsville)

Selected 2 Pilot companies: Analytical Services, Inc. (ASI) and Cirrus Technology, Inc. (CTI)

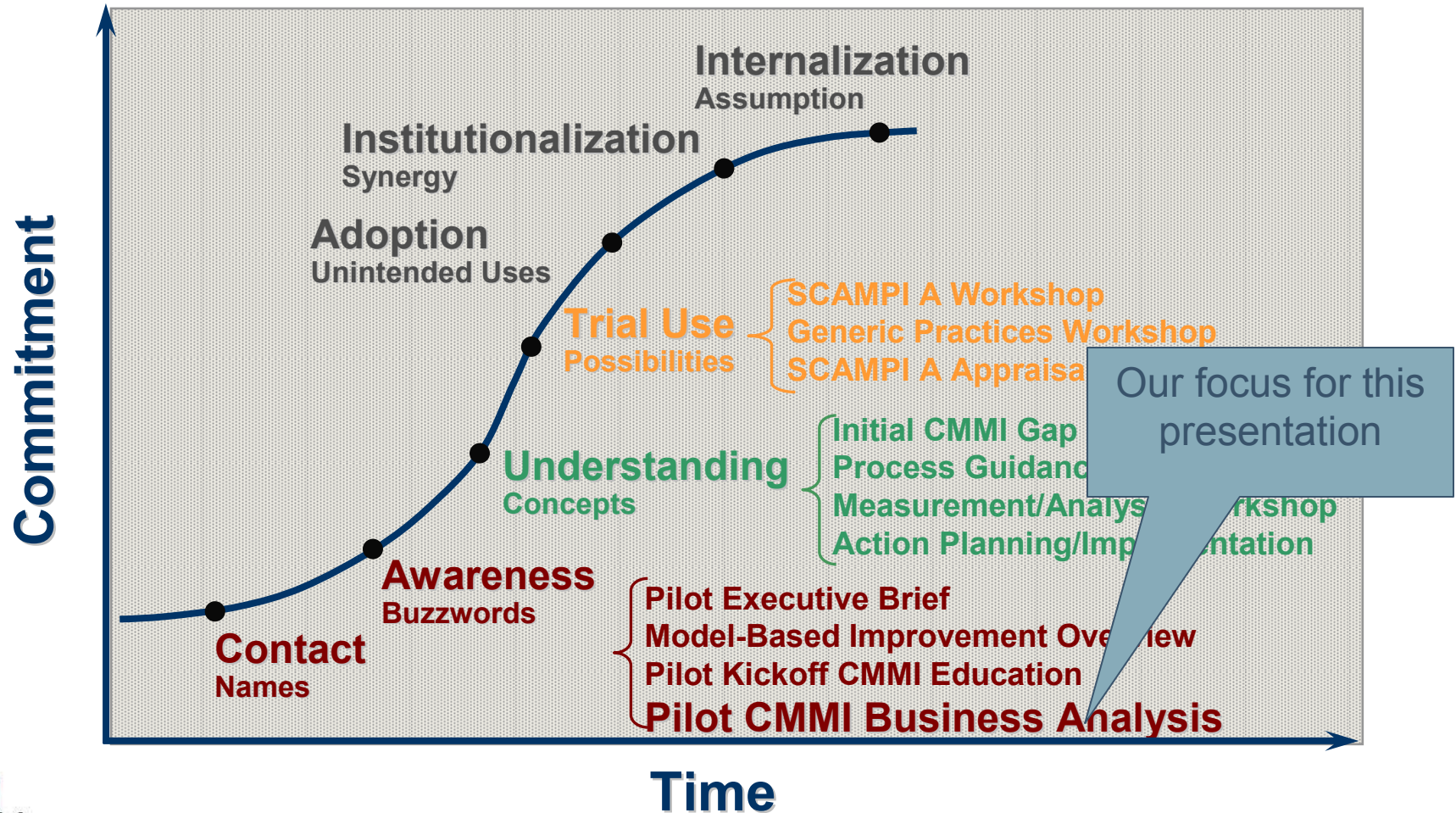
Pilot artifacts will be available at the SEI website by the end of the year

- Toolkit
- Experience reports (one for each company)





Summary of Materials Provided by Pilot





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Purpose of CMMI-based Business Analysis

Provide those considering adoption of CMMI with enough information to make a reasonable first guess as to which Process Areas would be most helpful to them

ASSUMPTION: the organization is looking for areas that will have early, visible, positive effects on the business' performance, regardless of "level" designations.



Two-Pronged Approach-1

Incorporate symptoms that are often seen when practices for a particular Process Area (PA) are missing into the Process Area education portion of an orientation session

- Get a 1st level reading for each PA using “thumb votes” that are recorded on a flip chart:
 - Do the practices of this PA have High/Medium/Low impact on your business if they aren’t done well?
 - What level of problem are you experiencing in this topic/Process Area? High/Medium/Low

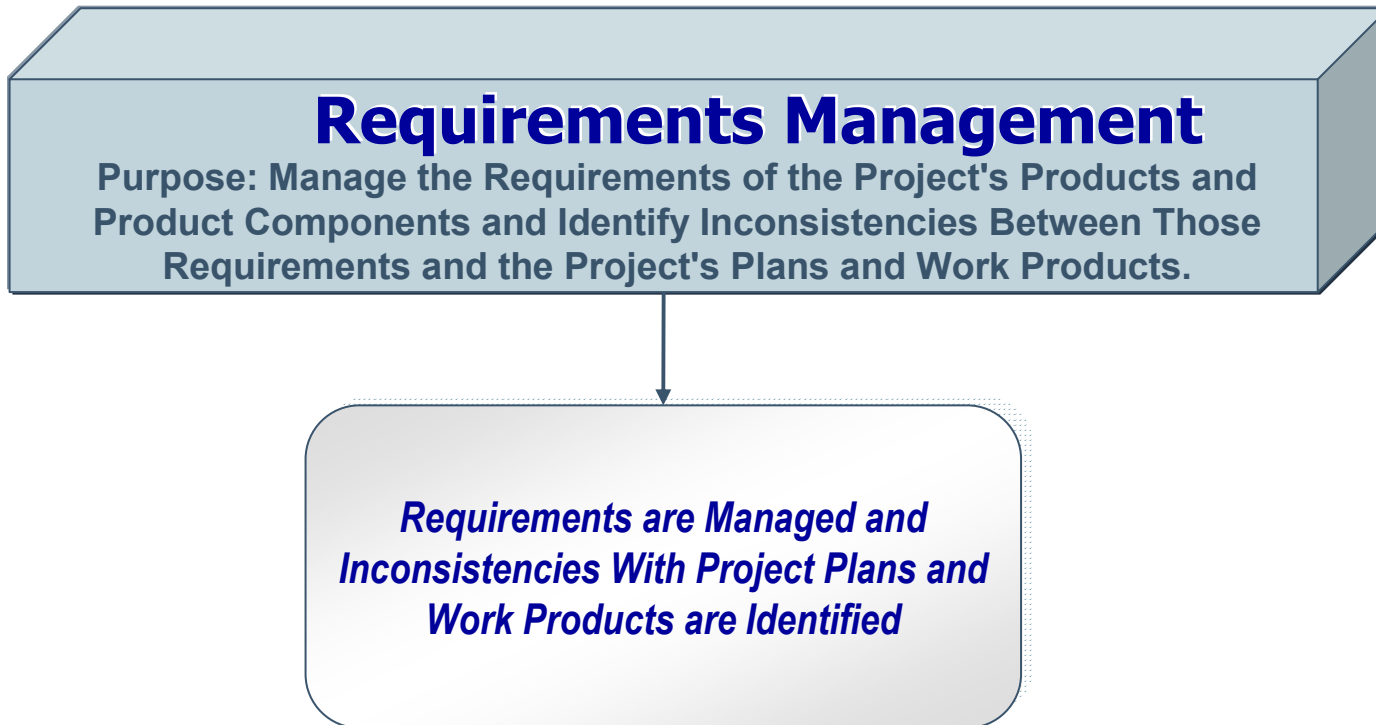


Example Process Area Materials

- We used basic information about each Process Area, supplemented by a discussion of what tends to happen if that process isn't performed well, something NOT currently included in introductory training materials
- The Requirements Management Process Area is shown here...



Engineering (ML 2)





Engineering (ML 2)

Requirements Management



-  **Goals**
-  **Practices**
-  **Typical Work Products**



When Requirements Management isn't done well....

Symptoms:

- High levels of re-work throughout the project
- Requirements accepted by staff from any source they deem to be authoritative
- “Gallop” requirements creep
- Inability to “prove” that the product meets the approved requirements

Why Should You Care? Because....

- Lack of agreement among stakeholders as to what are the “real” requirements increases time and cost to complete the project
- You're highly likely to deliver an incorrect or incomplete product
- Revisiting requirements changes over and over is a waste of resource highly visible to the customer



Two-Pronged Approach-2

After education session is over, go back through the PAs, asking participants to write specific problems they are experiencing in their work related to each PA, one per sticky note.

Post these sticky notes with the correct PA on flip charts, one PA per flip chart (consultant can help to allocate a particular to a CMMI issues, if needed)

Review the types/volume of problems posted for each PA and use dot voting, dialogue, or other prioritization technique to finalize the list of PAs that will be worked on first.



Benefits of this Approach

Participants in the implementation process have a chance to advocate to help get their problems solved

Participants who have been involved in selecting the PAs tend to have more commitment to working with them

Instructor/facilitator gets a pretty strong sense of how much of the overview education is “sticking” with students

Many of the problems posted via sticky notes give a starting point for more in-depth gap analysis

Tie between implementing CMMI and business goals and issues is much clearer to participants after this exercise



When to Use This Approach

At the beginning of an improvement effort:

- Very effective when business analysis is integrated into CMMI education
- Could be done separately

At the beginning of a new cycle of improvement:

- Redo the business analysis
- Compare against most recent appraisal results/recommendations
- Use business analysis to help prioritize the recommendations from the appraisal



Critical Success Factors

Participants need to be selected from relevant parts of the organization in terms of the intended improvement scope

- If participants are asked to ID business problems but know they won't have even a chance of addressing them, great frustration results!

Choices made by the group need to be verified with senior sponsorship for the effort:

- If there is a big mismatch between the group priorities and senior management priorities, this conflict needs to be immediately addressed

Facilitator needs to have in-depth model knowledge and have good skills in adapting the model to different organizational contexts



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Summary

Including business analysis with CMMI education provides a strong motivator for small (and possibly larger?) organizations getting started in improvement

- Focusing on areas where CMMI *explicitly* could help them with business problems provides immediate, visible benefit

Pilot companies who performed the business analysis followed through on their improvements to reach tangible benefits as well as achieving desired appraisal results



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How Pilot Artifacts Can Help Small Businesses





How the Pilot Artifacts Can Help Small Businesses

Three artifacts from the pilot will be available on the SEI website

- Toolkit
- 2 Experience reports

The CMMI for Small Business Pilot artifacts should prove useful in helping small businesses

- Focus their improvement efforts
- Figure out how and where to get started
- Tie their improvements to business goals
- Train their staff
- Realize payoffs early in the improvement
- Improve their ability to prepare for appraisals



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