CMMI: Adapting to SEI's New Integrated CMM

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What this session is *not* about….

- The history of CMMI and its evolution.
- The role of the SEI and its relationship to CMM users.
- The architecture or contents of the CMMI suite.
- The controversy over the use of such a flexible and broad model for contractual supplier assessments.

What this session *is* about ….

- Using the CMMI to drive continuous improvement.

Session Plan

- Describe the *SW-CMM Level 3 Plateau* that prevents many organizations from maximizing CMM-based benefits.
- Offer an alternative to higher levels of CMM-based capability that includes broadening the focus of processes targeted for improvement.
- Discuss conceptual issues involved in multiple-CMM improvement programs.
- Provide a *brief* overview of the CMMI, with specific comparisons to the SW-CMM v1.1 model.
- Recommend CMMI adoption strategies and actions.

CMMI isn't a *problem*, it's a *solution*.

The Problem

- CMMI offers a broad improvement model based on the older available CMMs.
- IT organizations are struggling with how to adapt to CMMI without sacrificing improvements and capabilities gained in the past.
- Users who have reached a plateau against one model, usually the CMM for Software at Level 3, wonder whether they should make the investment in adopting a new bigger model; afraid that they'll be starting over again.

The SW-CMM Level 3 Plateau

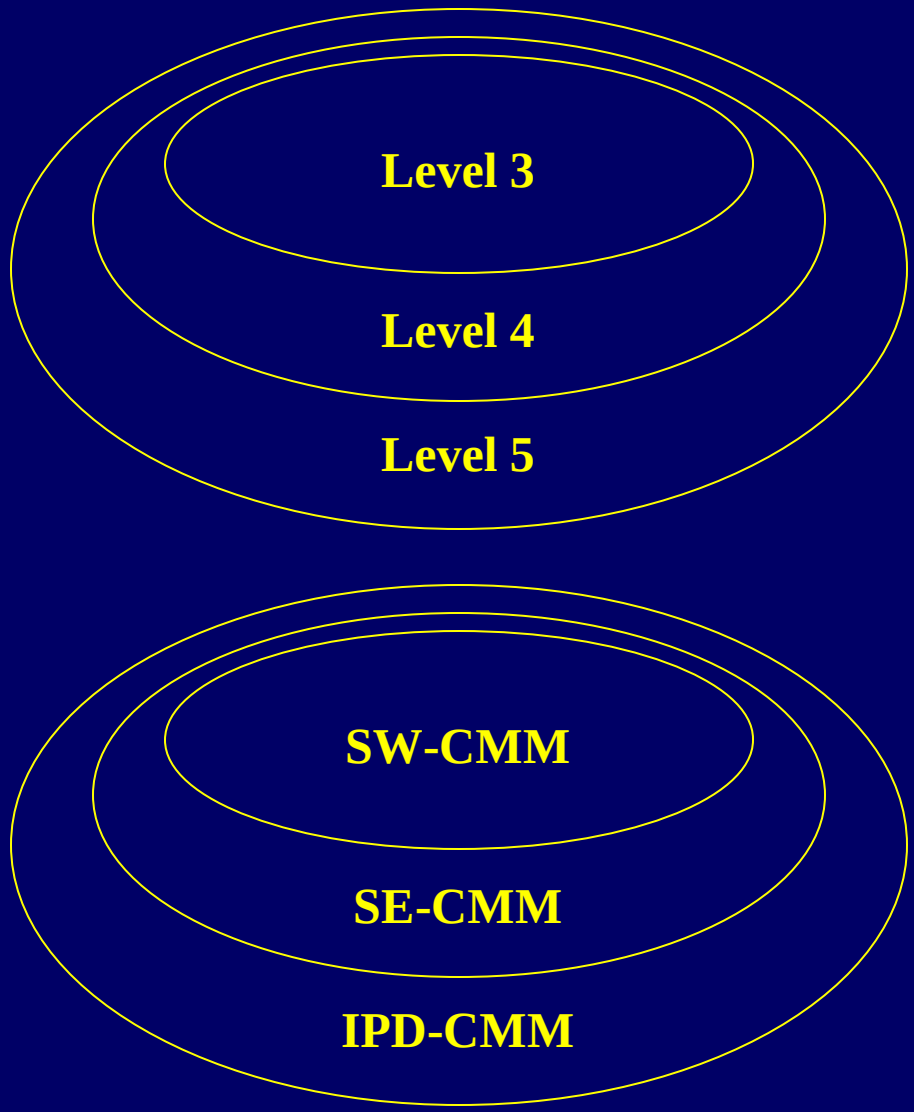
- Organizations that have successfully achieved SEI SW-CMM Level 3 are often confronted with the challenge of trying to determine what to do next.
- Often organizations simply challenge themselves to do more or better at their CMM Level 3 practices and are afraid to commit to CMM Level 4 goals.
- It's possible to challenge an organization at CMM Level 3 to move *across*, rather than *up*, the maturity continuum by working in one of the many other available CMMs.

Plateau Alternatives

- Continue moving up toward CMM Level 4 and CMM Level 5 maturity levels.

or

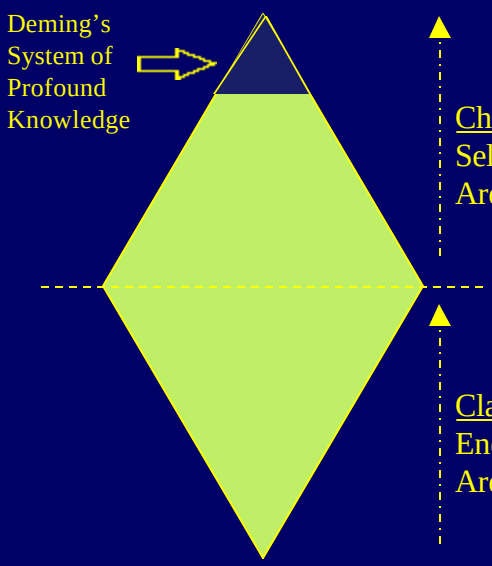
- Broaden the scope of activities to include a wider array of process capability by adopting another CMM model.



Broadening CMM Coverage

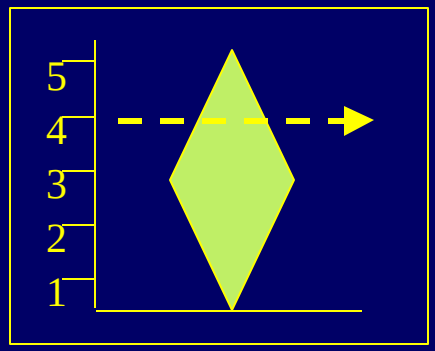
- An organization that assesses at Level 3 against the Software CMM will usually self-assess significantly lower against the SE-CMM or IPD-CMM, at least initially.
- This gap creates the necessary tension for the organization to challenge itself to improve, without the need to set CMM Level 4 or Level 5 goals for itself.
- It's a *breadth* focus to continuing improvement as an alternative to the *depth* focus of attaining Level 4 on the Software CMM alone.
- It addresses the common concern that CMM Level 3 organizations typically still have significant problems at their system boundaries that aren't adequately addressed by concentrating on Level 4 improvements.

Paradigm Change in Process Thinking

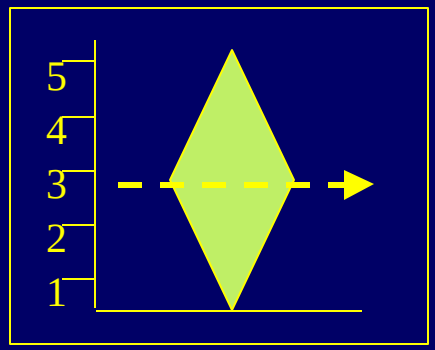


Chaos Theory
Self-organizing Process
Area where less-is-better!

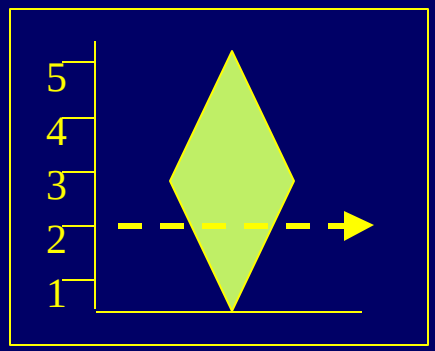
Classical Theory
Energy-absorbing Process
Area where more-is-better!



Expect improvements to decrease mass, and increase elegance. Need for less compliance checking as allowance is made for more self-direction.

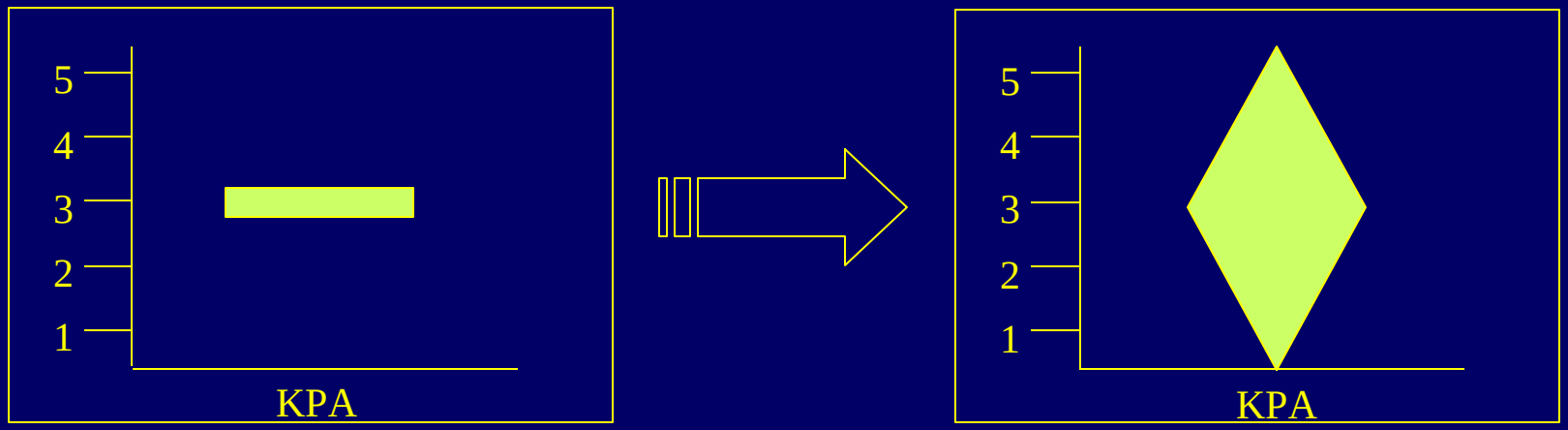


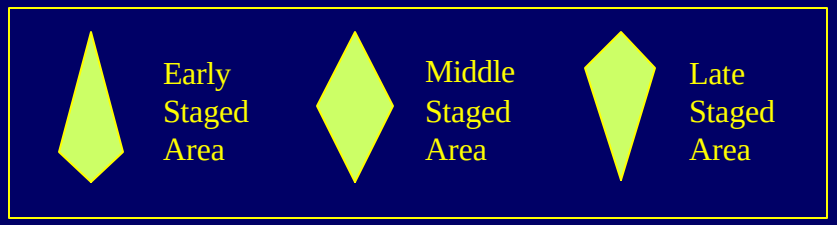
Key turning point for process improvement!

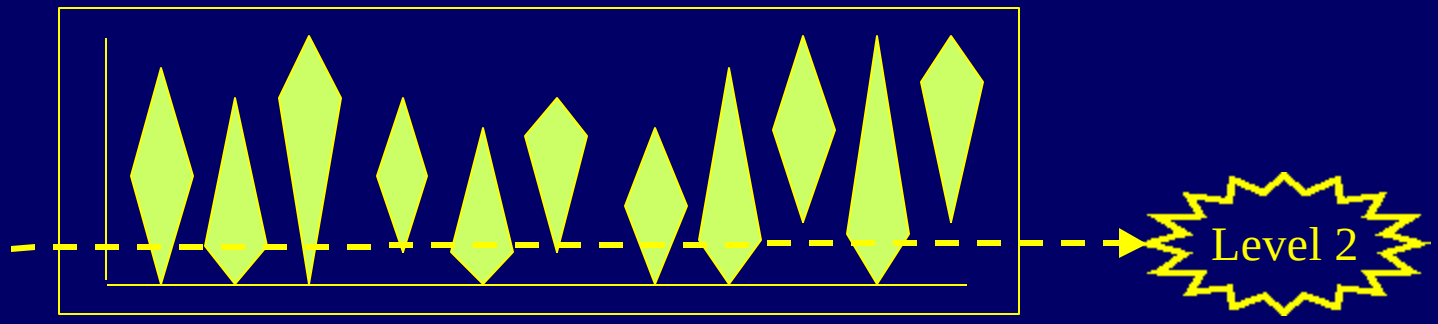


Expect improvements to expand and increase the process mass. Need for more tools, training, and support for successful deployment.

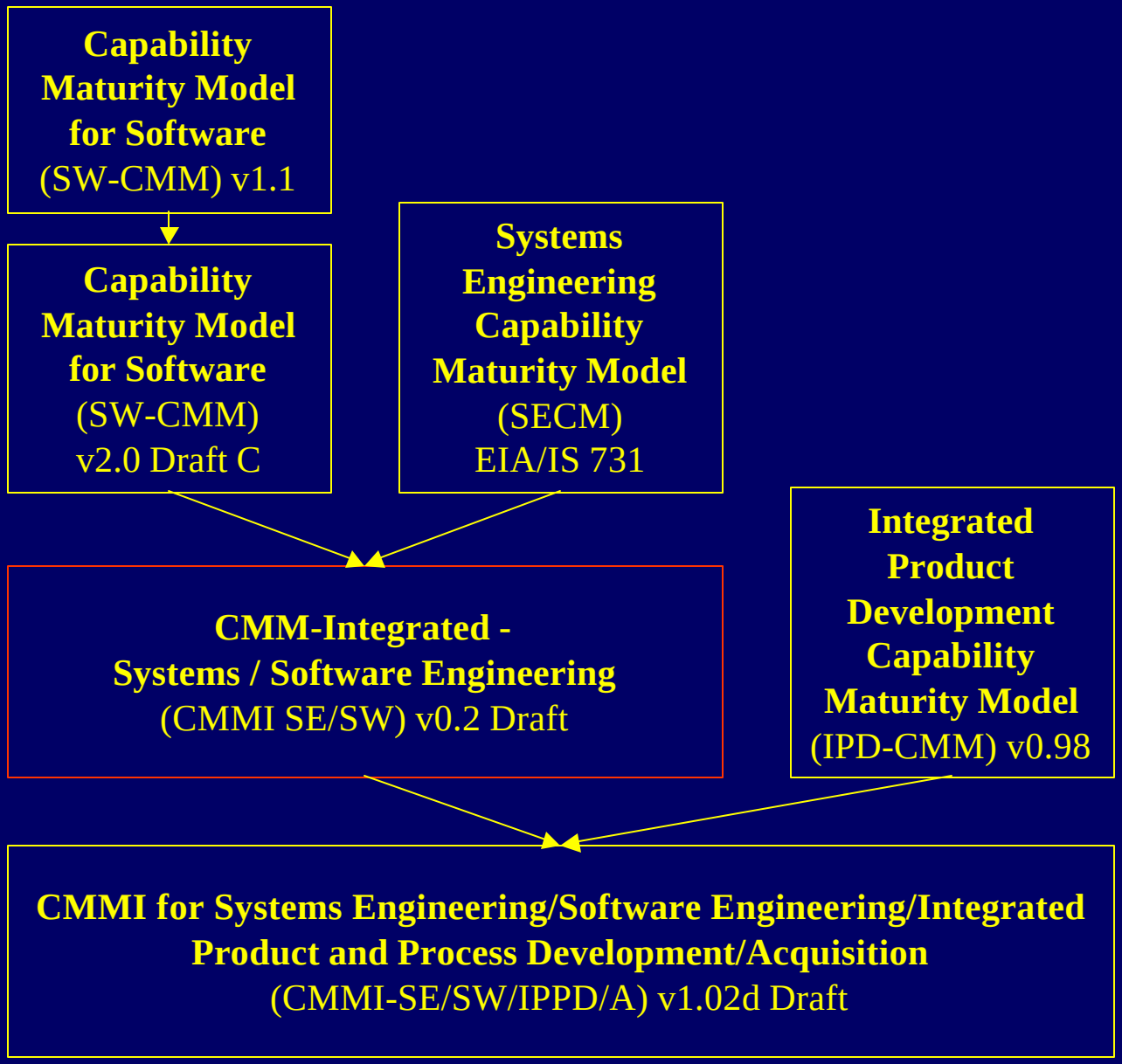
Staged-to-Continuous Thinking







CMMI Source Documents



CMMI Staged Model

Managed (Level 2)

- ***Requirements Management***
- ***Project Planning***
- ***Project Monitoring and Control***
- ***Supplier Selection and Monitoring***
- Measurement and Analysis
- ***Process & Product Quality Assurance***
- ***Configuration Management***

Quantitatively Managed (Level 4)

- Organizational Process Performance
- Quantitative Project Management
- Quantitative Supplier Management

Optimizing (Level 5)

- Organizational Innovation and Deployment
- Causal Analysis and Resolution

Defined (Level 3)

- Requirements Development
- **Technical Solution**
- **Product Integration**
- **Verification**
- Validation
- **Organizational Process Focus**
- **Organizational Process Definition**
- **Organizational Training**
- Integrated Project Management
- Integrated Supplier Management
- Risk Management
- **Integrated Teaming**
- Decision Analysis and Resolution
- Organizational Environment for Integration

CMMI Continuous Model

Process Management

- **Organizational Process Focus**
- **Organizational Process Definition**
- **Organizational Training**
- Organizational Process Performance
- Organizational Innovation and Deployment

Project Management

- ***Project Planning***
- ***Project Monitoring and Control***
- Integrated Project Management
- Risk Management
- **Integrated Teaming**
- Quantitative Project Management

Engineering

- ***Requirements Management***
- Requirements Development
- **Technical Solution**
- **Product Integration**
- **Verification**
- Validation

Support

- ***Configuration Management***
- ***Process & Product Quality Assurance***
- Measurement and Analysis
- Decision Analysis and Resolution
- Organizational Environment for Integration
- Causal Analysis and Resolution

Acquisition

- ***Supplier Selection and Monitoring***
- Integrated Supplier Management
- Quantitative Supplier Management

Recommended Order for Adoption

First Year

- Emphasize maintaining current Level 3 practices.
- Initiate *Measurement & Analysis* practice development.
- Rebuild Level 2 practices to include other CMMI extensions to Level 2 process areas.

Second Year

- Rebuild Level 3 practices to include CMMI extensions to process areas that overlap SW-CMM.
- Self-assess against the entire CMMI model.

On-going

- Prioritize process areas for continuing deployment.
  - Emphasize old SE-CMM process areas first.
  - Follow-on with old IPD-CMM process areas.

3-year Sunset

Further Recommendations

- Plan to use *both* the continuous and staged models.
  - Maximize continuous capability profile. [Micro]
  - Emphasize staged maturity level for comparisons. [Macro]
- Broaden process sponsorship and stakeholders.
  - CMMI impacts broader range of functions and processes.
  - Software leadership is only *part* of the sponsorship now.
- Place *heavy* emphasis on education and training.
  - CMMI is a magnitude larger than SW-CMM.
  - Paradigm shift requires greater self-direction.

Recap & Close

- The plateau effect at CMM Level 3 was a problem long before CMMI was initiated.
- The adoption of other non-software CMMs has been a significant problem because of architectural incompatibilities and terminology differences.
- The development of the CMMI has largely solved the problems of architecture and language.
- The broader CMMI model offers a broader array of improvement options for those organizations ready to accept the challenge of adoption and transition.