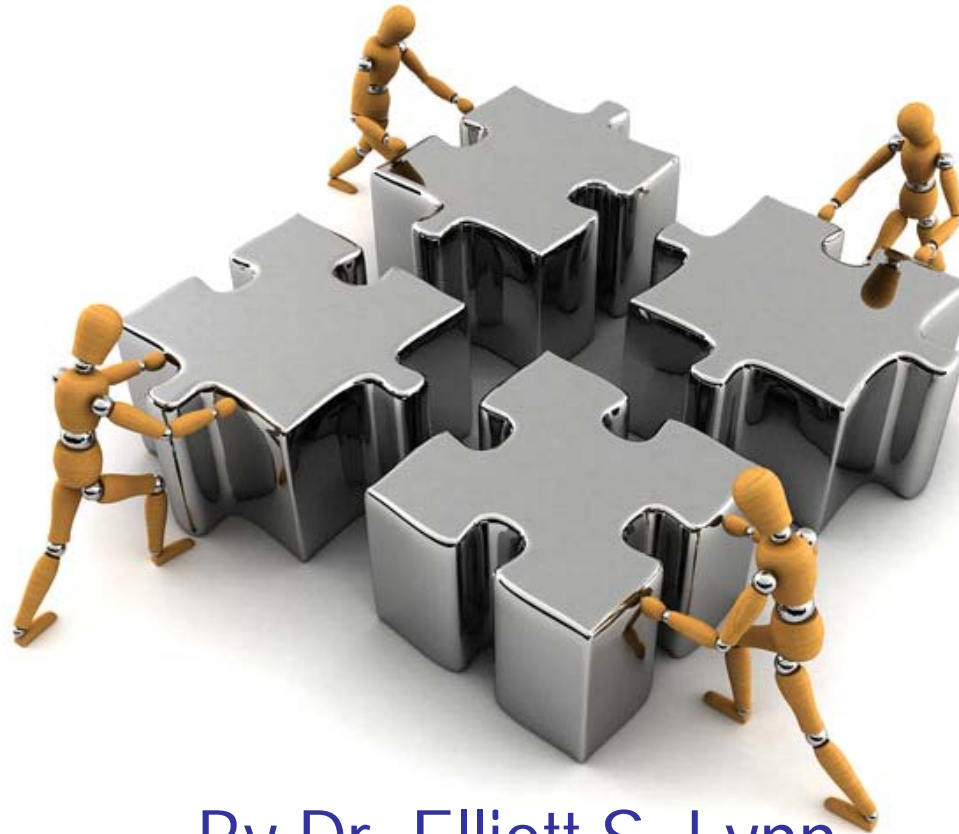# CMMI Measurement and Metrics

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CECOM
LCMC
*Life Cycle Management Command*

# Measuring Success

- How do you measure success?

- Is success measurable?

- How would you measure success?

- How can CMMI provide an answer the questions that indicate success or failure and other questions every time?

- Measurement and Metrics

# Measuring Success (Cont)

- One of the most difficult challenges in an organization is the ability to measure success or failure of IT related projects.

- IT projects often have varying levels of success to many people.

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# What is Project Success

- Success: Project Completed on time
- Success: Project Completed on or under budget
- Success: Project completion aligned with original scope
- Success: Internal and or external customer satisfaction

# What is Project Failure

- Failure: Project not completed on time
- Failure: Project completed over budget
- Failure: Project scope changed dramatically
- Failure: Internal and or external customer dissatisfied

# Partial Success?

- What happens when there is a combination of both successes and failures of a project?

- Is there a such thing as a partial success?

# Partial Success? (Cont)

- Success: Project Completed on time

- Failure: Project completed over budget

- Success: Project completion aligned with original scope

- Failure: Internal and or external customer dissatisfied

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# CMMI makes the difference

- Does partial failure equal success?

- Does partial success equal failure?

- Using CMMI metrics and measurement helps you answer these questions consistently and every time.

# Utilizing CMMI

- Shore (2008) acknowledged that project leaders using the CMMI process follow a rational and consistent approach to project management, eliminating or reducing systematic biases from decision-making.

- Utilizing the CMMI process improvement model to establish measurement and metrics on a project reduces the possibility of various definitions of success and failure on similar projects.

# Utilizing CMMI (Cont)

- Despite the strong emphasis placed on utilizing CMMI in many government organizations, identifying meaningful measurement and metrics remains a struggling point on many projects.

- Rosacker and Olson (2008) asserted that despite the heavy emphasis of CMMI "quantitative methods appear to be used less in government projects than in other environments"

# CMMI Measurement

- Understanding the ability to measure elements of a project with quantifiable metrics provides program managers the ability to review those processes that contributed to possible success or failure as well as improve upon those processes on future projects.

- Martin (2008) stated, "You can't improve what you can't measure"

# CMMI Measurement (Cont)

- How can you claim success if there is no criteria to measure against?

- The use of measurement and metrics also help shape deliverables and identify the need for appropriate corrective action.

# Using CMMI

- The use of CMMI identifies the importance of measurement and metrics in all areas of the CMMI, but quantitative project management is a requirement in maturity levels 4 and 5.

- Maturity levels 4 and 5 are the highest levels identified in the CMMI and measurement and metrics are the foundation of quality and performance.

# CMMI and Goals

- Measurement and metrics starts with some basic questions:
- What are the goals of the organization?
- How do we plan to accomplish those goals?
- What is the organization doing right to meet those goals?
- What is the organization doing wrong hindering meeting those goals?
- How can we improve?

# Metrics and Measurement

- Using Metrics and Measurement

- Just as there is more than one definition of success, there must be multiple metrics to ensure the complete picture of success is accurate and attainable

- Using multiple or integrated metrics is essential in measuring project progress and performance.

# CMMI for Insight

- Natwick (2009) explained using project managers could gain insight from one or more of the following four major indicator categories:
- Progress. The achievement or completion of goals or commitments.
- Resources. The availability or capability of organizational assets.
- Quality. The problems and/or defects with a product or process.
- Stability. The degree of change, completeness, or effectiveness.

# Important Measurements

- There are several ways to measure during the project, but what makes it important for the next project?

- Lessons learned?

- Problems?

- What went wrong?

# Important Measurements (Cont)

- What went right and how did you document each process and activity you did correctly?

-  Which steps are repeatable and universally apply?

- What are the differences between that project and the others?

- A common mistake is to focus too much, on what went wrong

# Repeating the process

- While it is important to learn the lessons of what went wrong and correct them going forward, it is more important to create processes and document what went right as you go along.

- It more difficult to remember or go back and attempt to recall what you did correctly.

- The most insignificant things can be a time and cost savings to others

# How much do you remember

- Quick exercise

# Conclusion

- Measurement and Metrics are essential tools in identifying issues, but also essential for creating repeatable processes
- Applying lessons learned is great, but creating processes to provide greater insight to those lessons have more value
- Be just as mindful of things that go right as you are of things that go wrong
- Anything that is not repeatable may be considered luck or chance

# Questions

- Questions