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the Engineering and Services Performance Improvement company

The Importance of the CMMI® to Lean/Agile, Six Sigma, and ITIL® Performance Improvement Efforts

presentation to the

October 18th, 2010

Jeffrey L. Dutton
Principal Consultant
EASPI

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Administrivia

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  - IT Infrastructure Library® is a Registered Trademark of the Central Computer and Telecommunications Agency which is now part of the Office of Government Commerce
  - ® CMMI is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University
  - SCAMPI is a Service mark of Carnegie Mellon University
- Who I am:
  - SCAMPI Lead Appraiser (Certified for Development and Services)
  - (Lean) Six Sigma Black Belt
  - Certified Scrum Master
  - Member, National Defense Industrial Association CMMI Working Group and Systems Engr Steering Committee
  - Invited Member, CMMI-SVC Advisory Group
  - Visiting Scientist, Software Engineering Institute

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This presentation assumes a working knowledge of CMMI constellations and a conceptual grasp of Lean Thinking, Six Sigma, and ITIL

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The CMMI essentially operates as an “anti-pattern” to Lean Thinking.

Utterly False

Well.. Maybe

Absolutely True

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CMMI constellations provide high-value strategies for performance improvement.

Utterly False

Well.. Maybe

Absolutely True

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Six Sigma provides high-value strategies for performance improvement.

Utterly False

Well.. Maybe

Absolutely True

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Lean Thinking provides high-value strategies for performance improvement.

Utterly False

Well.. Maybe

Absolutely True

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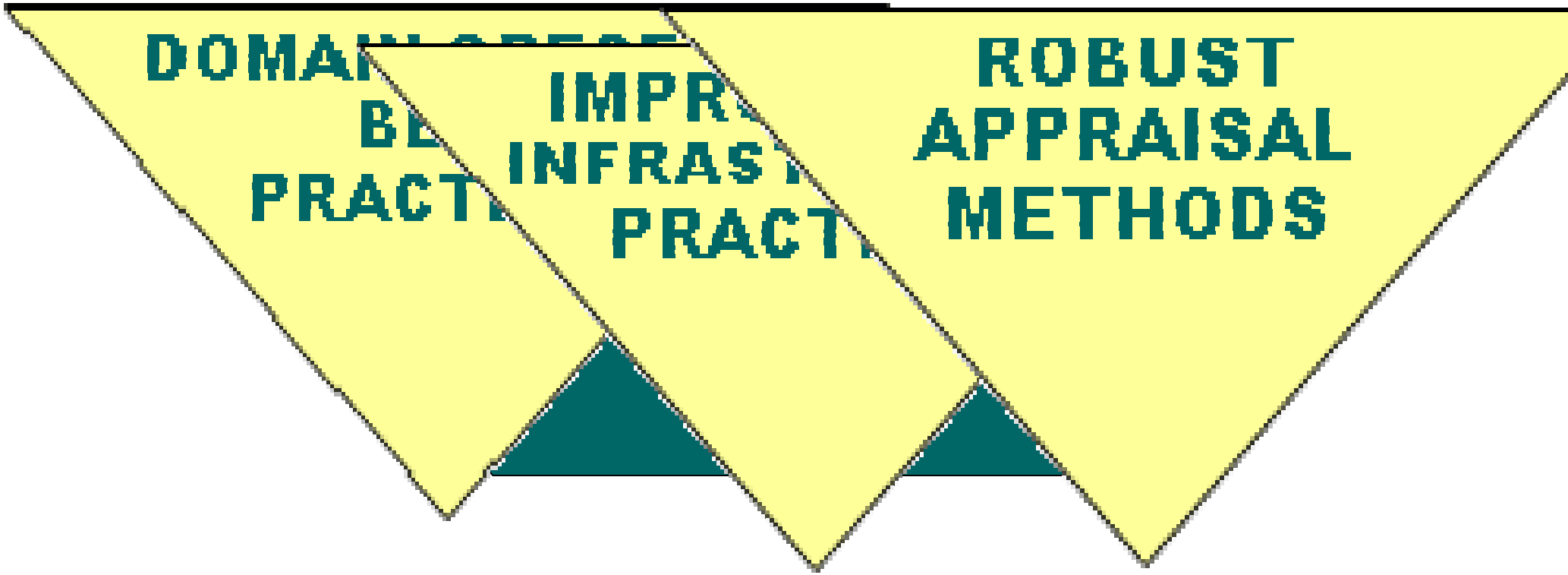
Capability Maturity Model Integration

- What is?
  - Models (goals, practices, informative material)
  - SCAMPI appraisal methods
  - Core training (SEI authorized)
- Value proposition:
  - Domain-specific best practices (Development, Services, and Acquisition)
  - Practices for improvement infrastructure
  - Framework for continuous improvement
    - Maturity Levels
    - Process Area Capability Levels
  - Robust, extensible appraisal methods
    - Course correction
    - Learning mechanism
    - Benchmarking



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    - Maturity Levels
    - Process Area Capability Levels
  - Robust, extensible appraisal methods
    - Course correction
    - Learning mechanism
    - Benchmarking
- Downside:
  - No improvement approach or strategy
  - Needs focus and leaning

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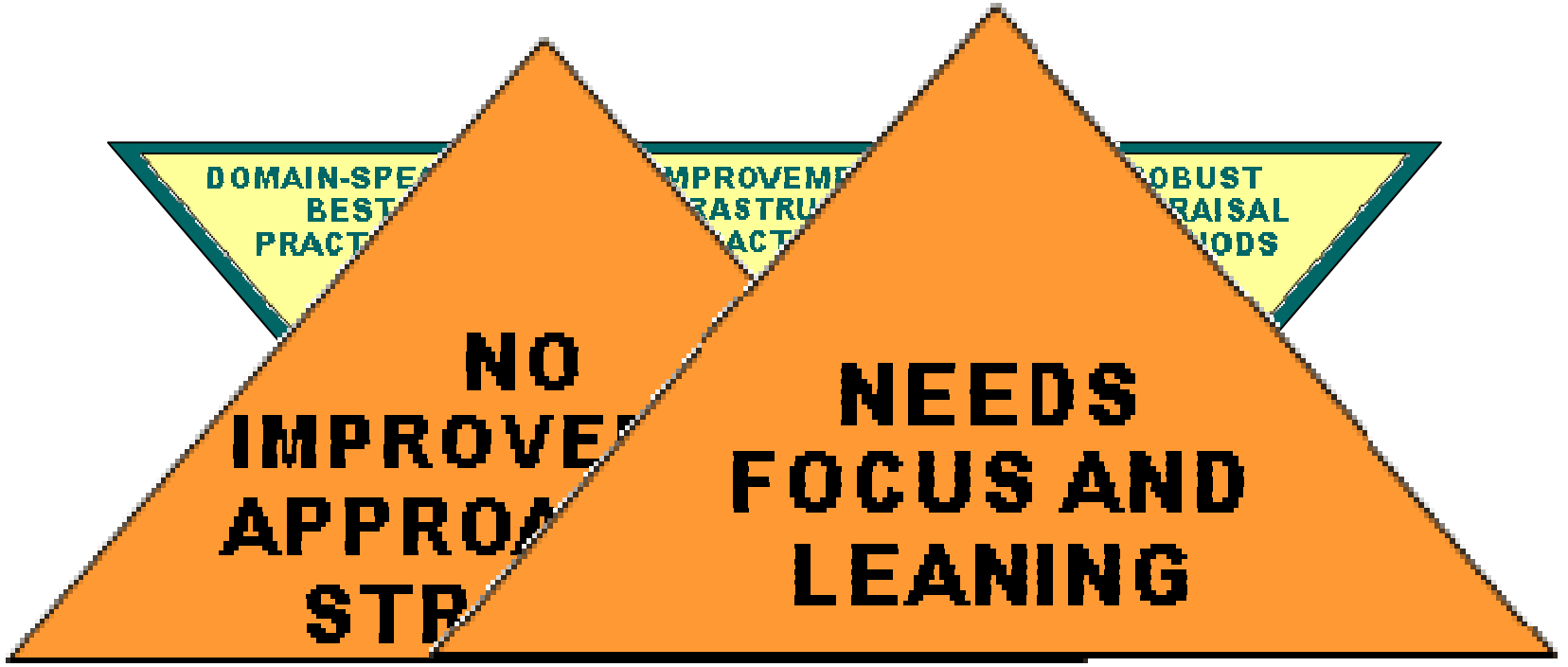

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What Makes Lean Work?

- Constant focus on customer value
- Waste elimination
- Shared vision/architecture
- Concurrency
- Information flow
- Iterations and synchronization
- Agile Project Management
- Rapid learning
- Skilled teams
- Rapid improvement
- Process ownership by the process “doer”
- Visualization and Kanban actions

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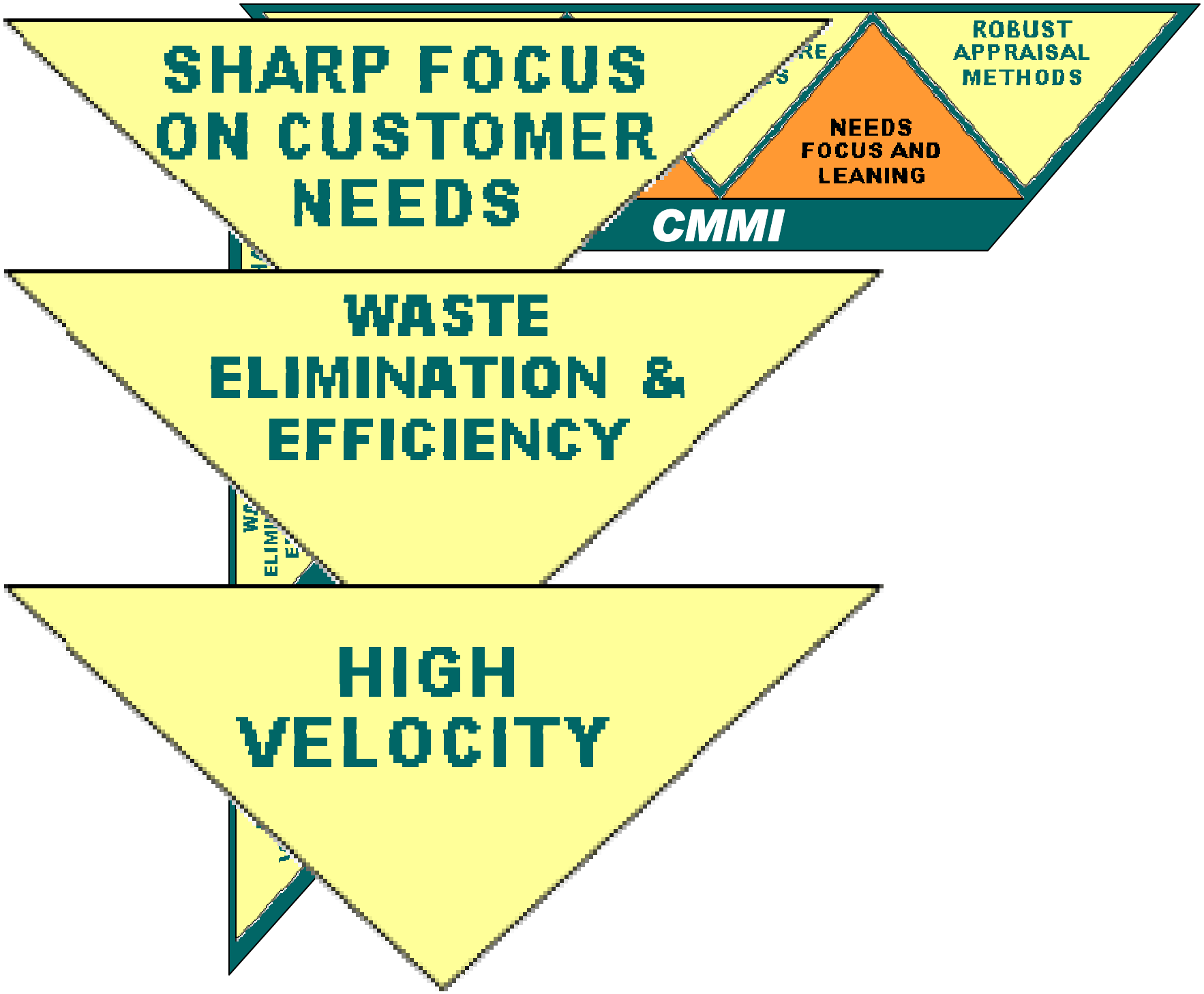
Lean Thinking

- What is?
  - Focus on customer value
  - Value stream mapping (workflows)
  - Cadence and synchronization
  - Organizational rapid learning
  - Process doers are process owners
  - Reliance on tacit knowledge and skilled team members
  - Agile project management
- Value proposition:
  - High velocity
  - Lean (smart) processes and process efficiency
  - Builds mature teams quickly
  - Rapid response to customer pressures


SHARP FOCUS
ON CUSTOMER
NEEDS
ROBUST
APPRAISAL
METHODS
NEEDS
FOCUS AND
LEANING
CMMI
WASTE
ELIMINATION &
EFFICIENCY
HIGH
VELOCITY

Lean Thinking

- What is?
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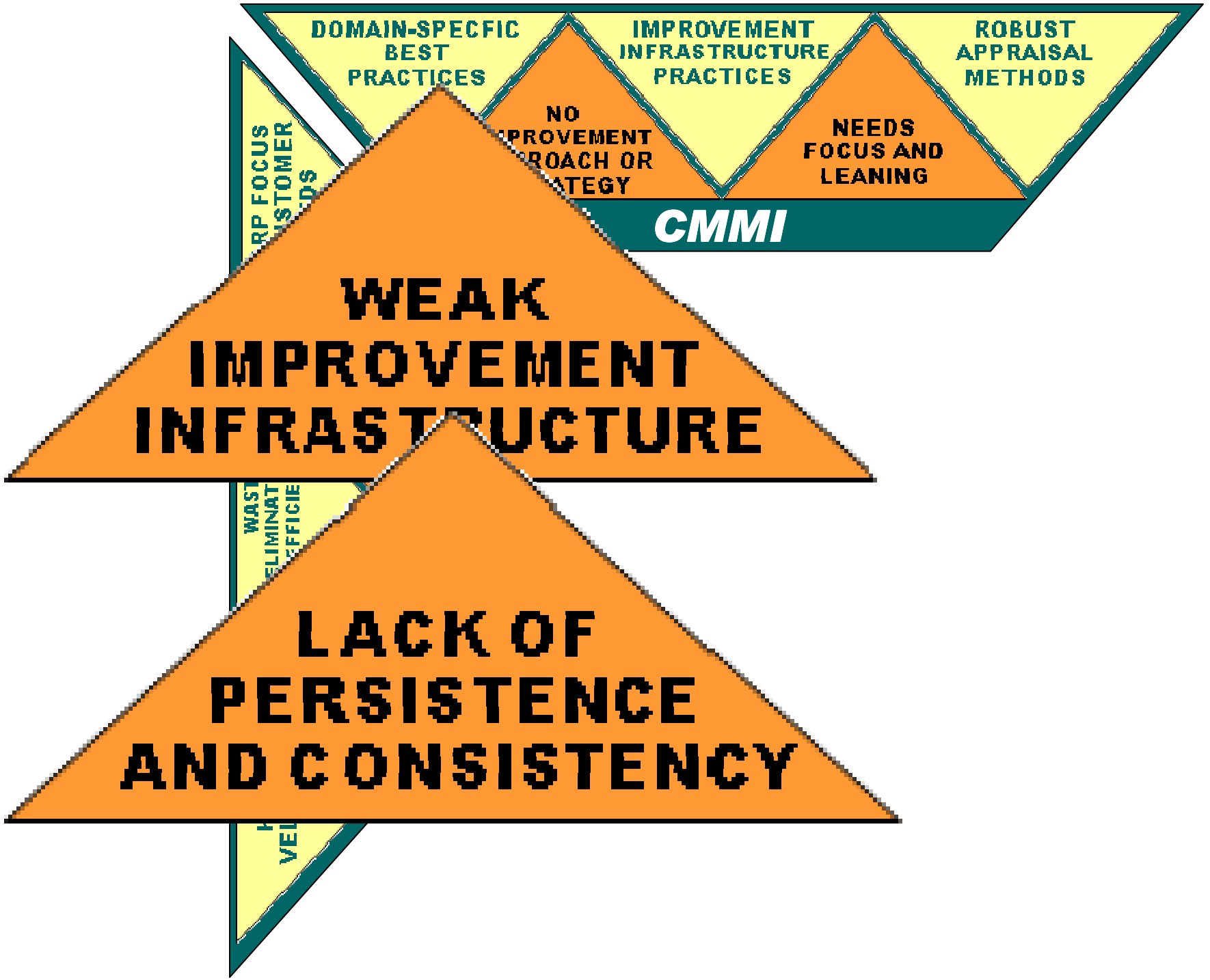
- Value proposition:
  - High velocity
  - Lean (smart) processes and process efficiency
  - Builds mature teams quickly
  - Rapid response to customer pressures
- Downside:
  - No improvement infrastructure
  - Suffers from lack of consistency and persistence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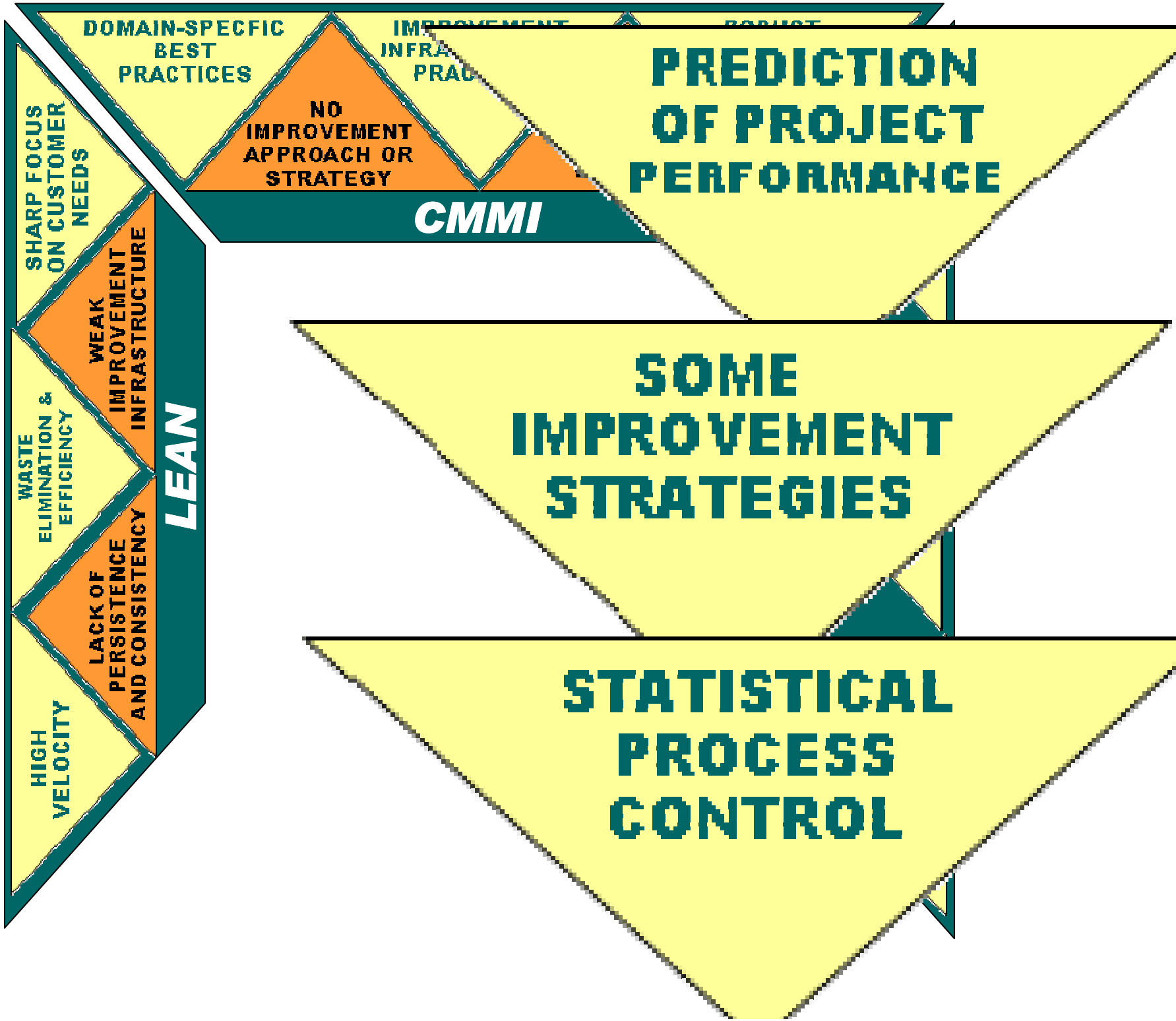
FOCUS AND
LEANING
CMMI
WEAK
IMPROVEMENT
INFRASTRUCTURE
LACK OF
PERSISTENCE
AND CONSISTENCY

Six Sigma

- What is?
  - Statistical mechanisms for process control
    - Process variability
    - Central tendency
  - Some mechanisms:
    - Regression and correlation
    - Tests of Hypothesis
    - Analysis of variance
    - Statistical process control
    - Experimental design
    - Process performance modeling and optimization
- Value proposition:
  - Allows prediction of project performance
  - Leading vs. lagging indicators
  - High degree of process control (e.g. six sigma)


DOMAIN-SPECFIC BEST PRACTICES
NO IMPROVEMENT APPROACH OR STRATEGY
CMMI
PREDICTION OF PROJECT PERFORMANCE
SHARP FOCUS ON CUSTOMER NEEDS
WEAK IMPROVEMENT INFRASTRUCTURE
WASTE ELIMINATION & EFFICIENCY
LACK OF PERSISTENCE AND CONSISTENCY
LEAN
HIGH VELOCITY
SOME IMPROVEMENT STRATEGIES
STATISTICAL PROCESS CONTROL

Six Sigma

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    - Analysis of variance
    - Statistical process control
    - Experimental design
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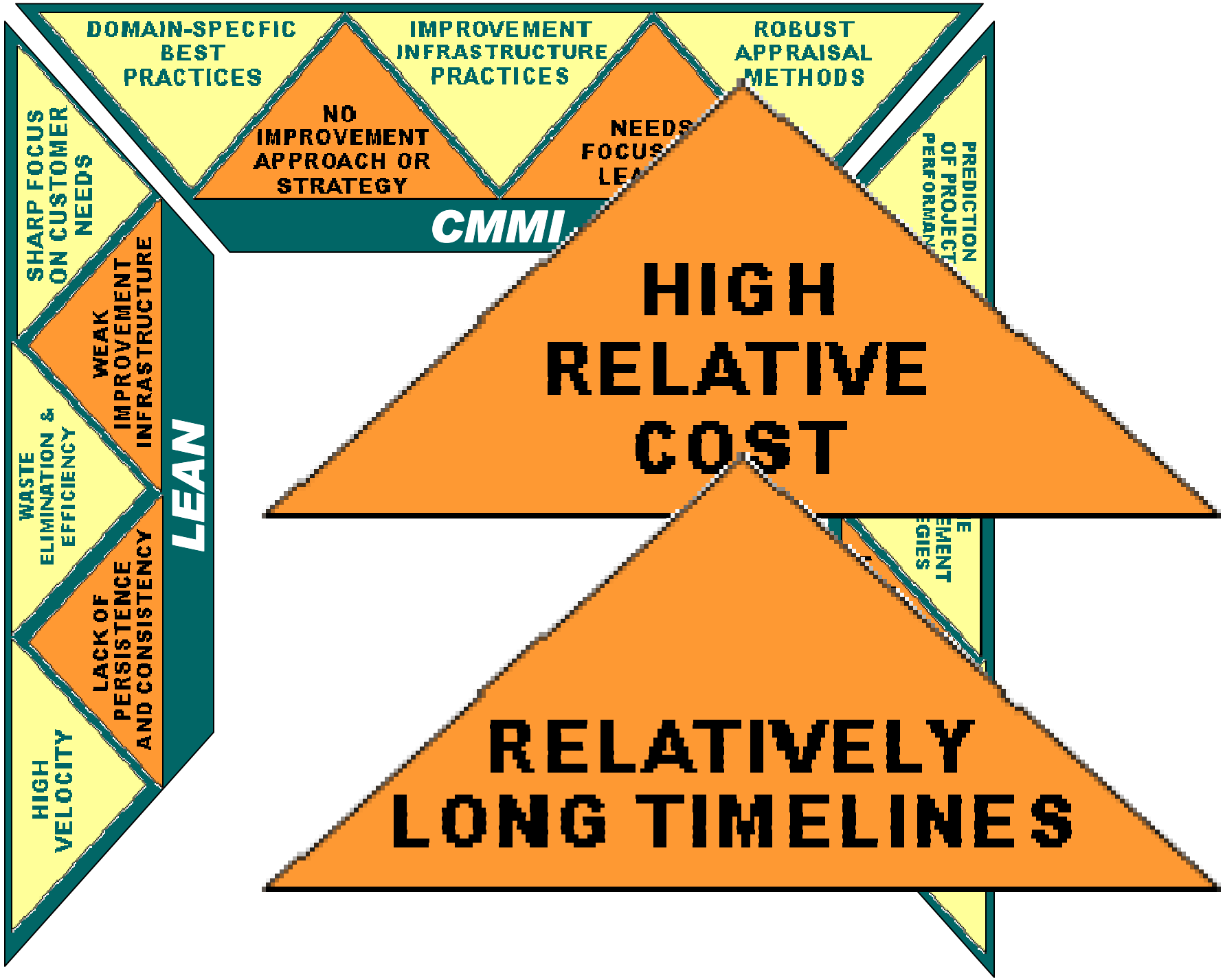
- Value proposition:
  - Allows prediction of project performance
  - Leading vs. lagging indicators
  - High degree of process control (e.g. six sigma)
- Downside:
  - High(er) cost
  - Extensive timelines (improved by lean)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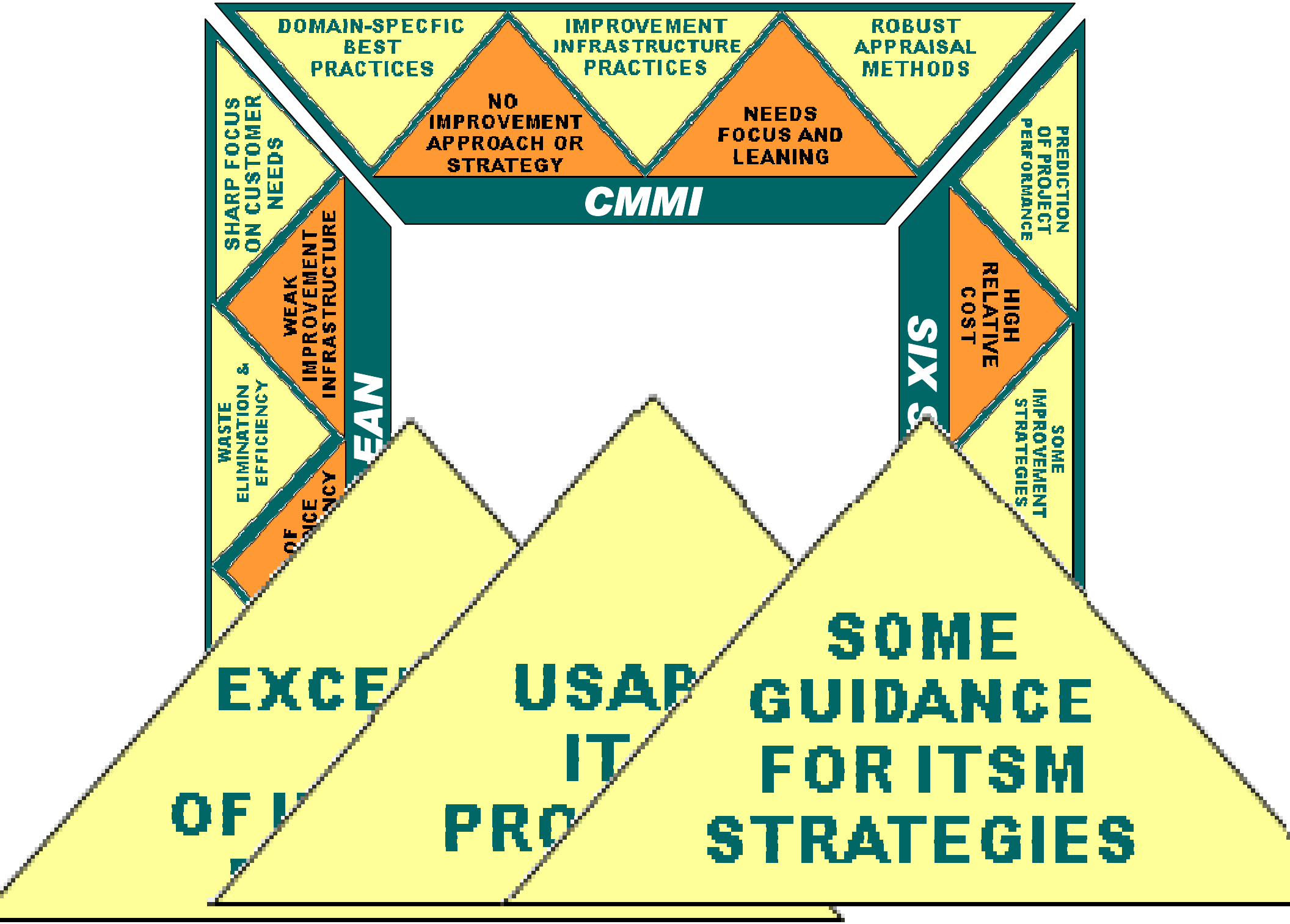
SHARP FOCUS ON CUSTOMER NEEDS
WEAK IMPROVEMENT INFRASTRUCTURE
WASTE ELIMINATION & EFFICIENCY
LACK OF PERSISTENCE AND CONSISTENCY
LEAN
HIGH VELOCITY
HIGH RELATIVE COST
RELATIVELY LONG TIMELINES

Information Technology Infrastructure Library

- What is?
  - Best practices for IT service operations
  - Fair implementation guidance
  - ITSM life cycle
    - (Strategy/Design/Transition/Operation/Continuous Improvement)
- Value proposition:
  - Excellent set of IT- specific practices
  - Several useable ITSM processes
  - Personal knowledge certifications
  - ISO 20000 registration
  - Some guidance for setting objectives and strategy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SOME IMPROVEMENT STRATEGIES
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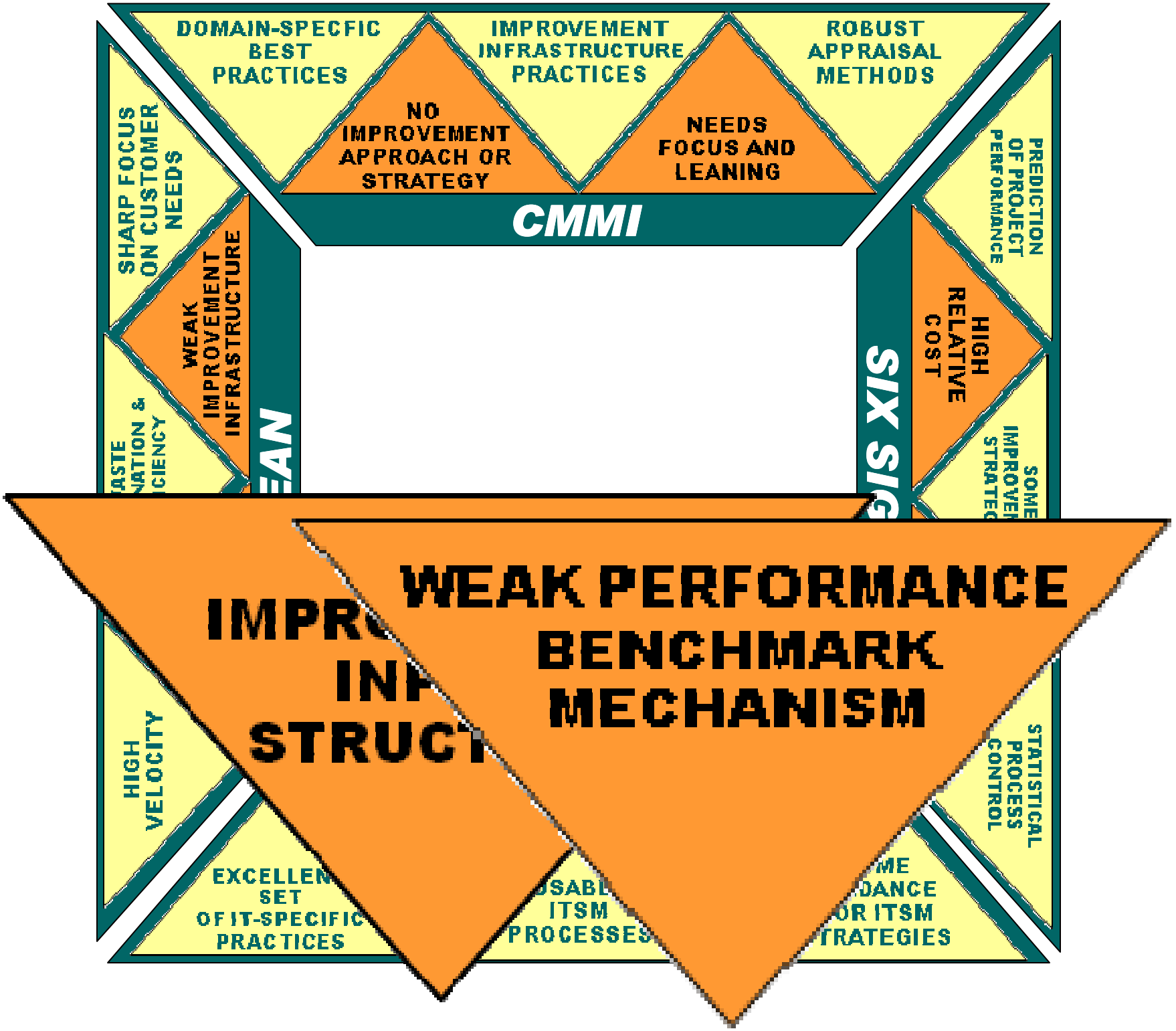
- Value proposition:
  - Excellent set of IT- specific practices
  - Several useable ITSM processes
  - Personal knowledge certifications
  - ISO 20000 registration
  - Some guidance for setting objectives and strategy
- Downside:
  - Little support for “organization for improvement”
  - No framework for benchmarking performance improvements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STATISTICAL PROCESS CONTROL
EXCELLEN
SET
OF IT-SPECIFIC
PRACTICES
SABL
ITSM
PROCESSES
ME
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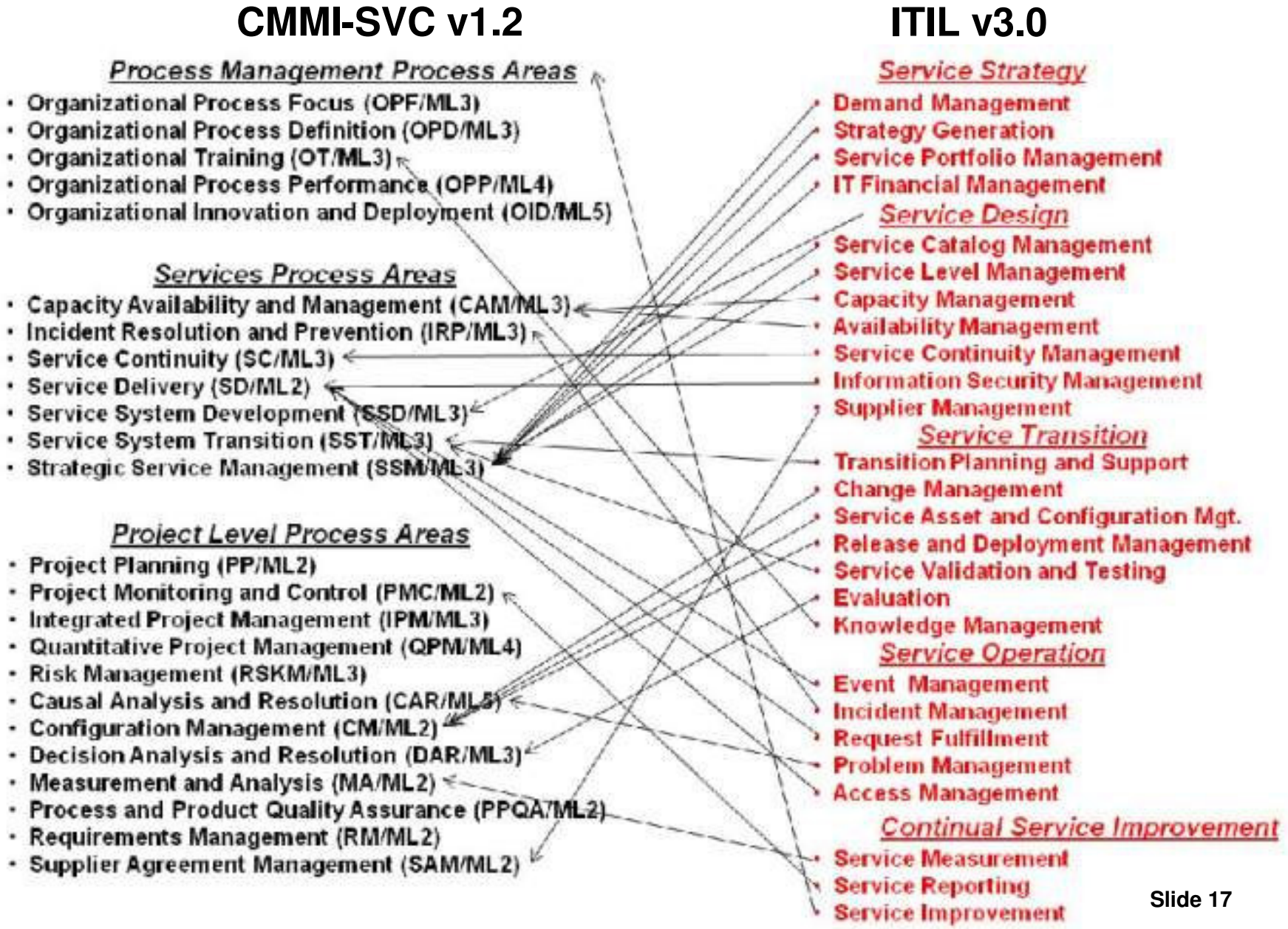
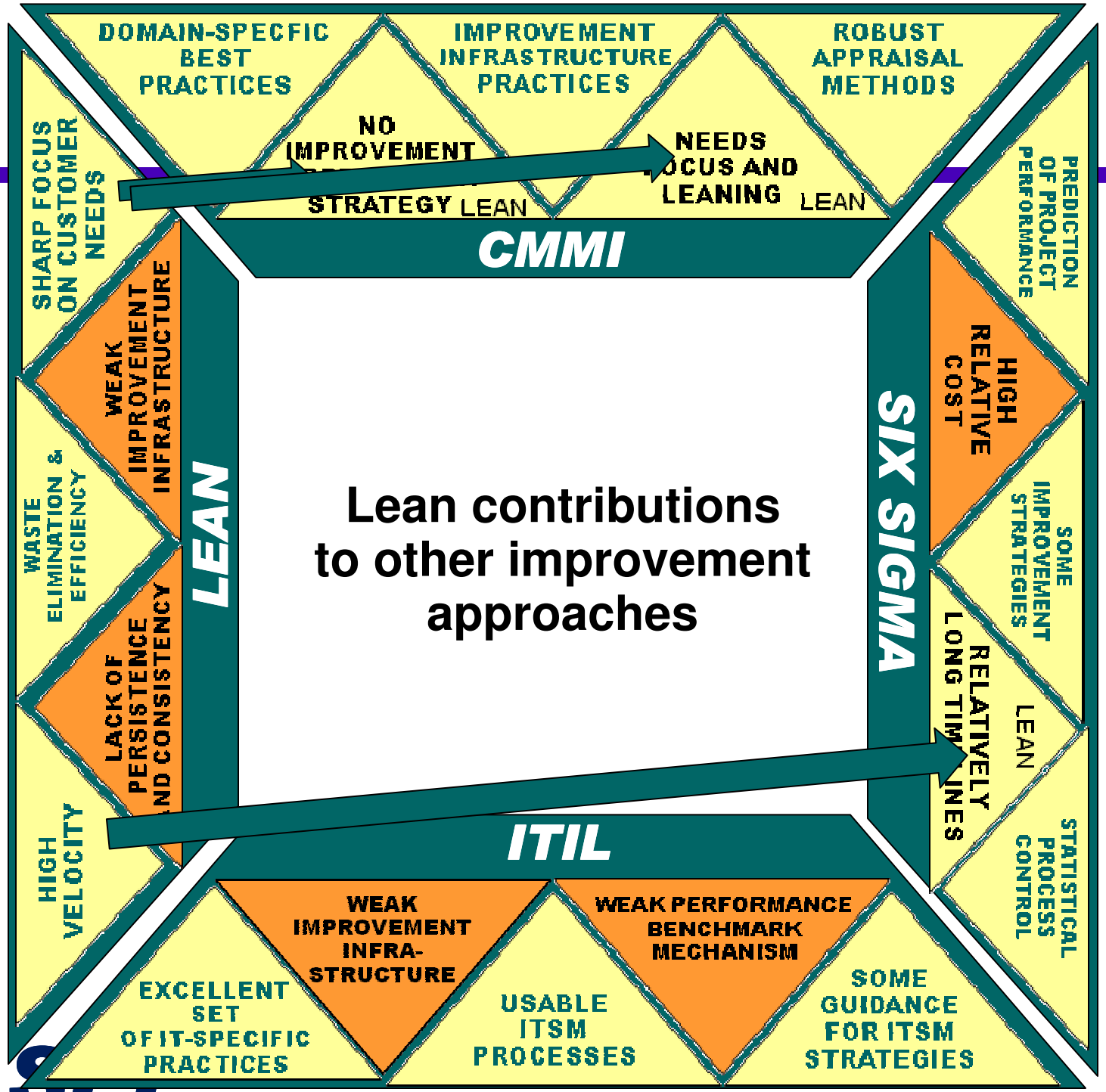
OR ITSM
TRATEGIES

ITIL/CMMI-SVC Mapping





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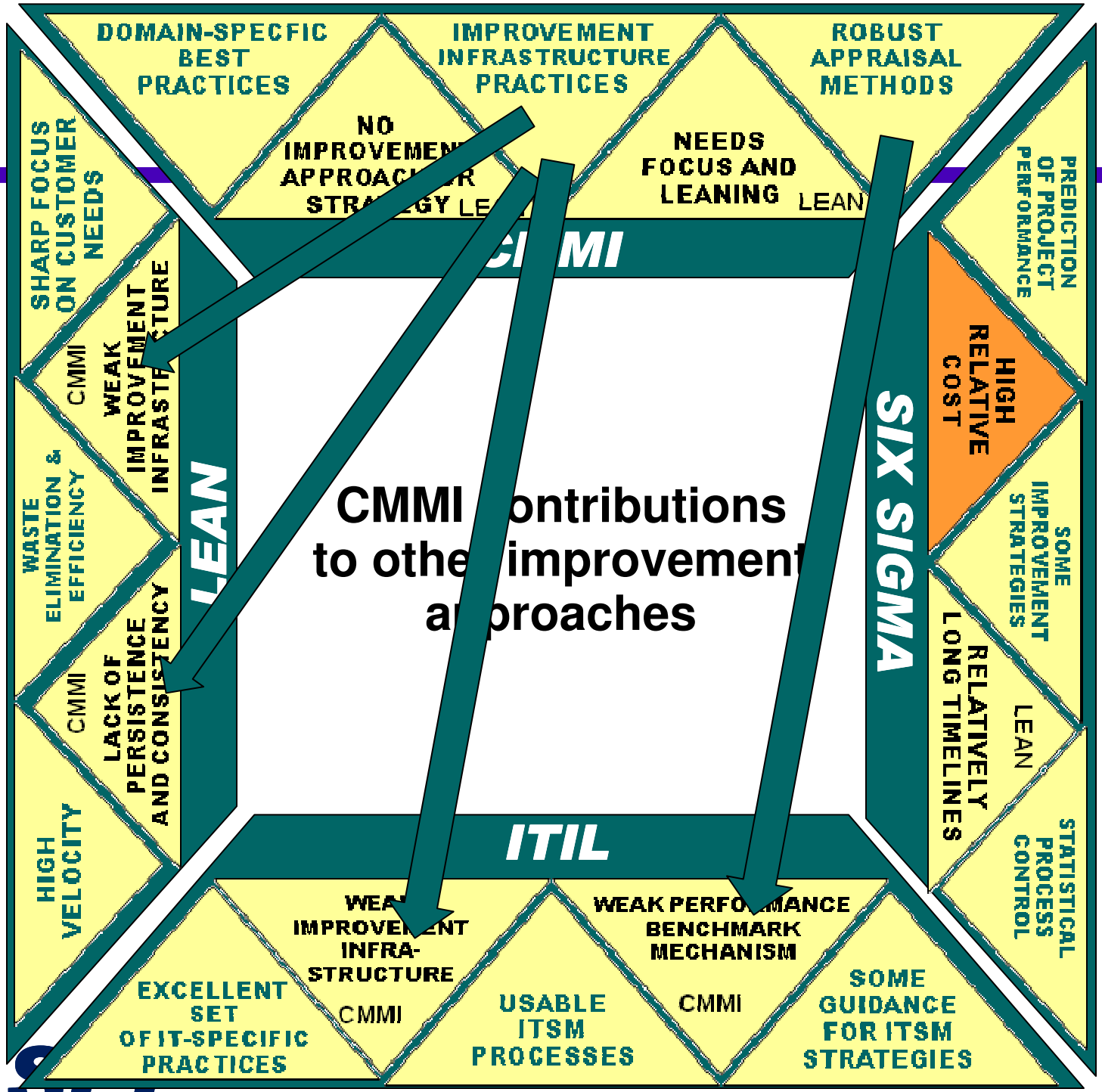

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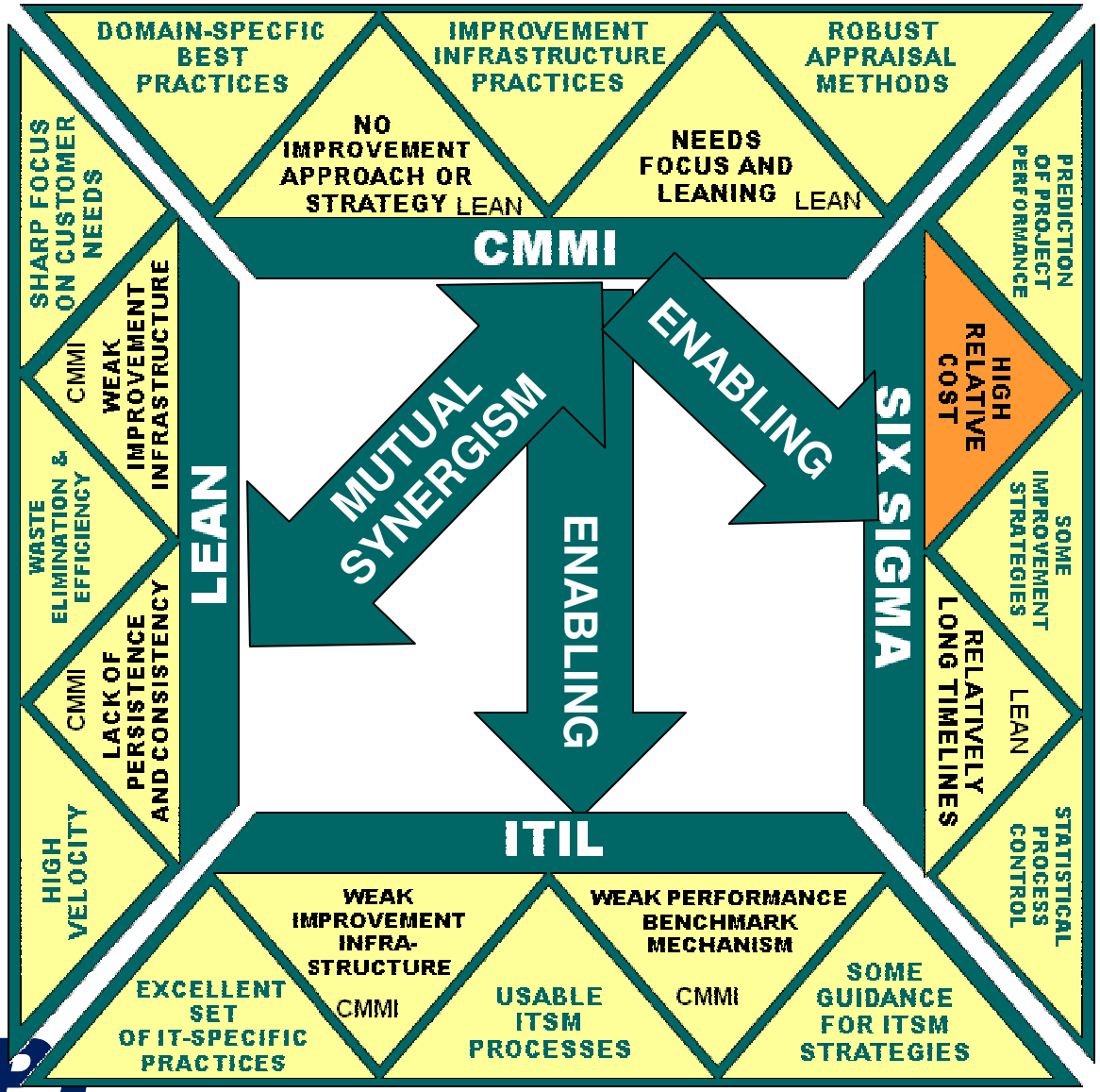
FRAMEWORK FOR IMPROVEMENT



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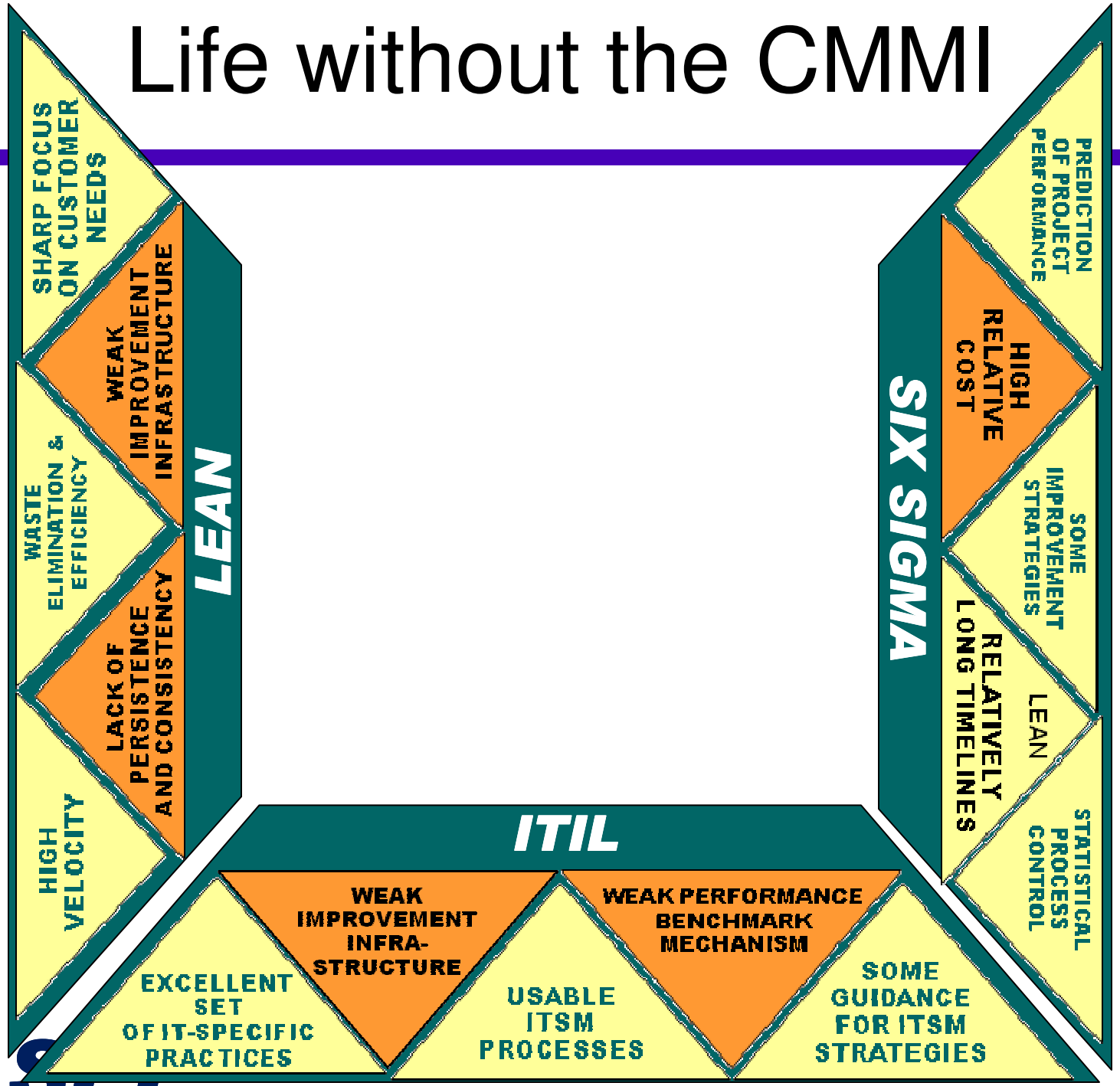
Life without the CMMI



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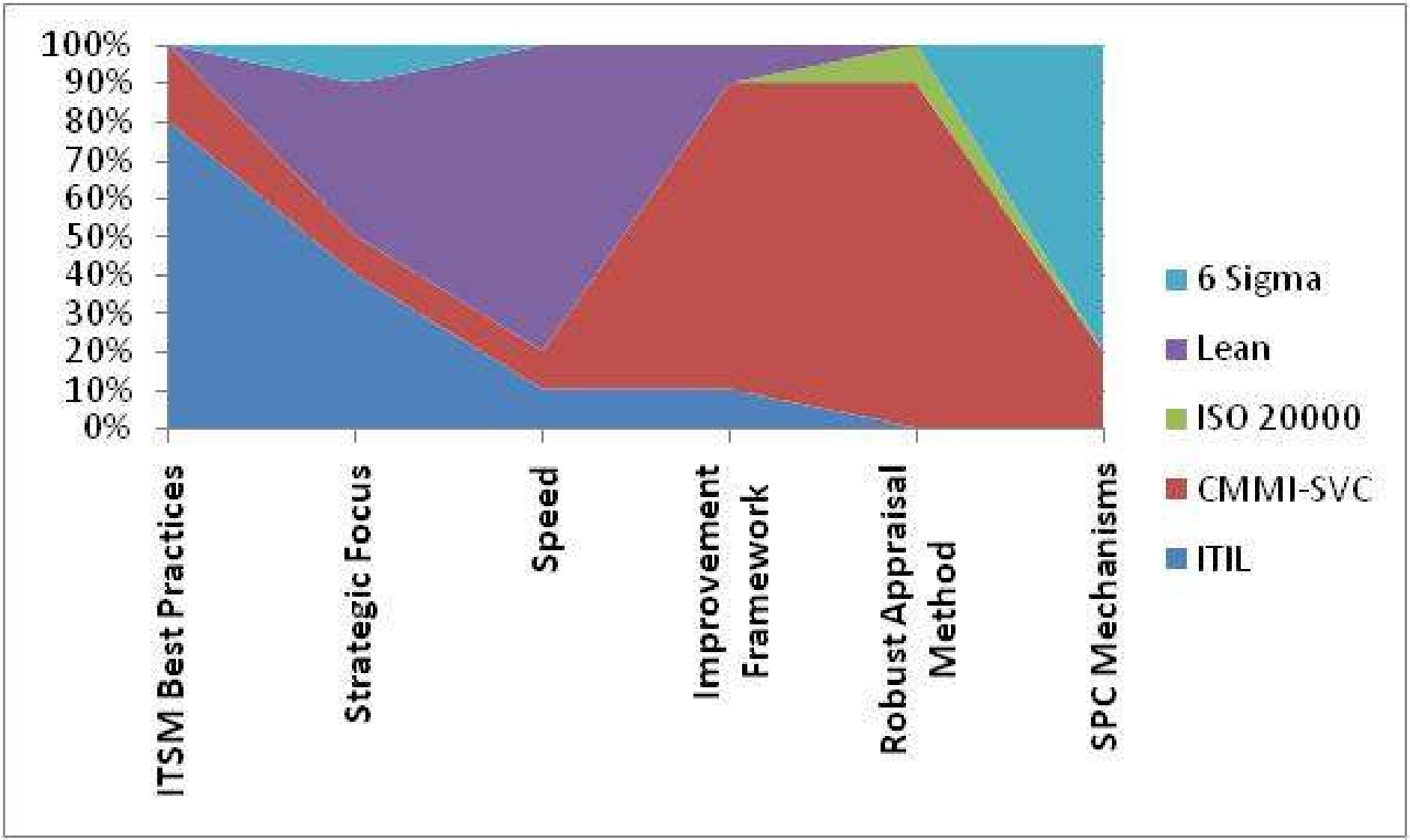
Relative Contributions
(CMMI-SVC Example)



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Questions?

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Office: 256.489.1789

Cell: 256.527.4151

www.easpi.com

Atlanta Tutorial:

"Composing the Right Improvement Framework"

November 13th

(May be viable as a NYC SPIN event)

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Bio for Jeffrey L. Dutton

Jeff is a Certified Lead Appraiser for the CMMI-DEV and CMMI-SVC, a certified (Lean) Six Sigma Black Belt, and a Certified Scrum Master. He was an original member of the CMMI Product Team, and has conducted seminal work on the integration of Lean Thinking and agile constructs into high-velocity CMMI implementations. Jeff is a member of the National Defense Industrial Association's CMMI Working Group, a (past) Chair and Technical Chair for the CMMI Technology Conferences and User Group, a member of the Steering Committee for the NDIA Systems Engineering Division, an invited member of the CMMI for Services Advisory Group, and a Visiting Scientist with the SEI.

He has a B.S. in Aerospace Engineering and an M.S. in Operations Research, along with very successful experience in operations research, astronautical engineering, systems engineering and simulation, software program management, test and evaluation, and systems acquisition. Jeff has published, consulted, and spoken at dozens of conferences in the U.S. and in Europe. He has been practicing CMMI-based performance improvement as a professional for more than 10 years.

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