

Best of Everything – ITIL, CMMI & Lean Six Sigma

SEPG 2008, Tampa FL

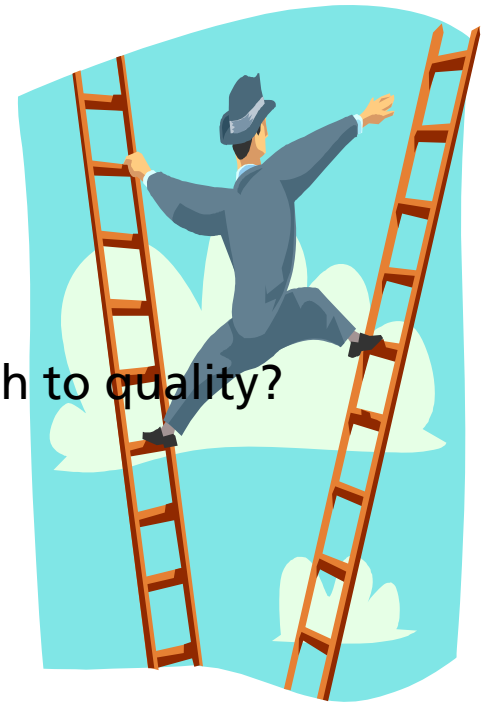
March 2008

What will be covered ?

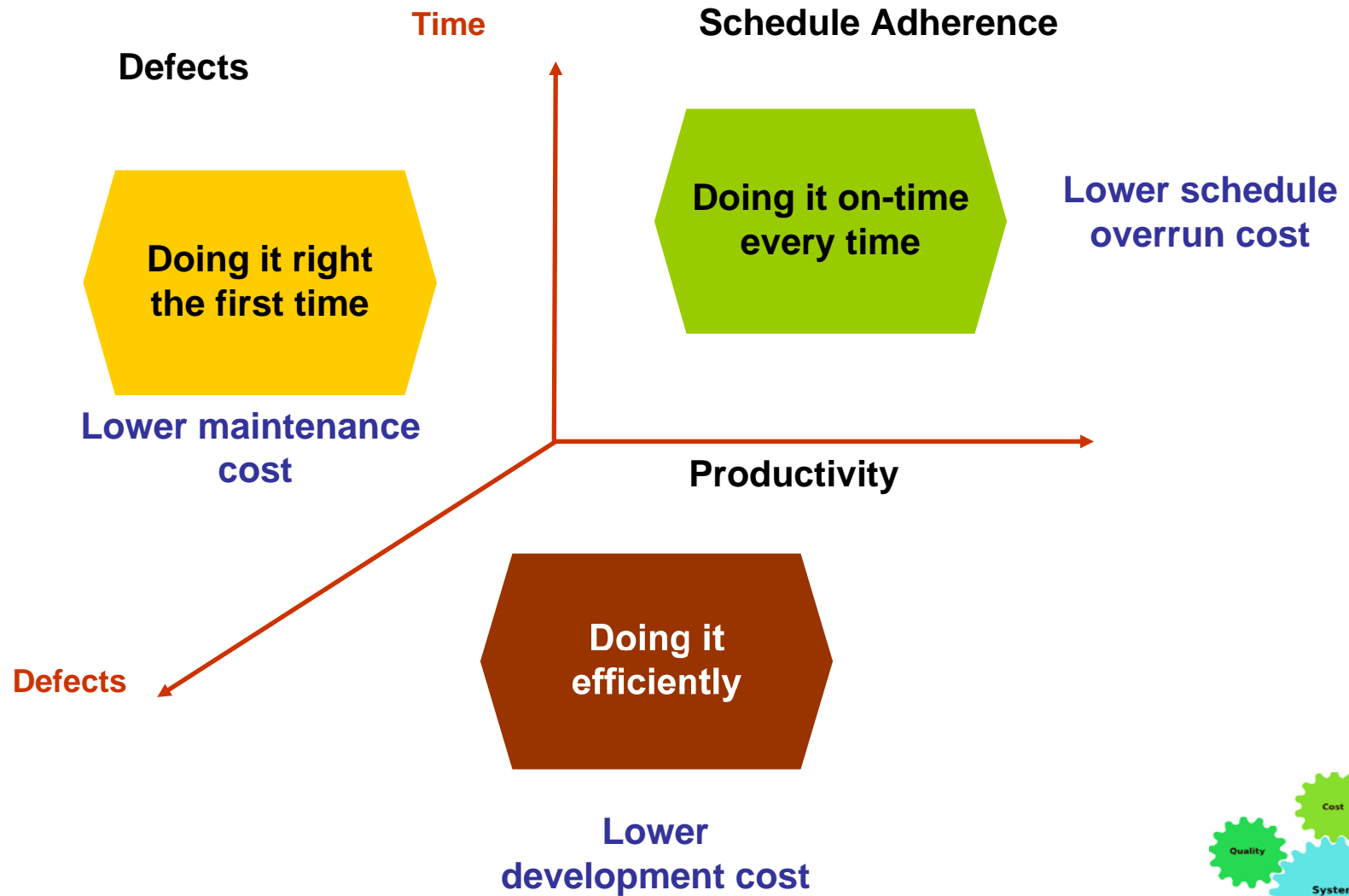
- ◆ Key Issues / Problem Statement
- ◆ Understanding individual frameworks / methodologies
- ◆ Comparison of approaches
- ◆ Integrating frameworks
- ◆ Summary

Key Issues

- ◆ We are already doing CMMI – does it makes sense to do Lean and Six Sigma?
- ◆ We have CMMI level 5 matured processes – do we still align to ITIL?
- ◆ Are these approaches compatible?
- ◆ Is there a need for organization to go for individual frameworks?
- ◆ What are the building blocks for an integrated approach to quality?



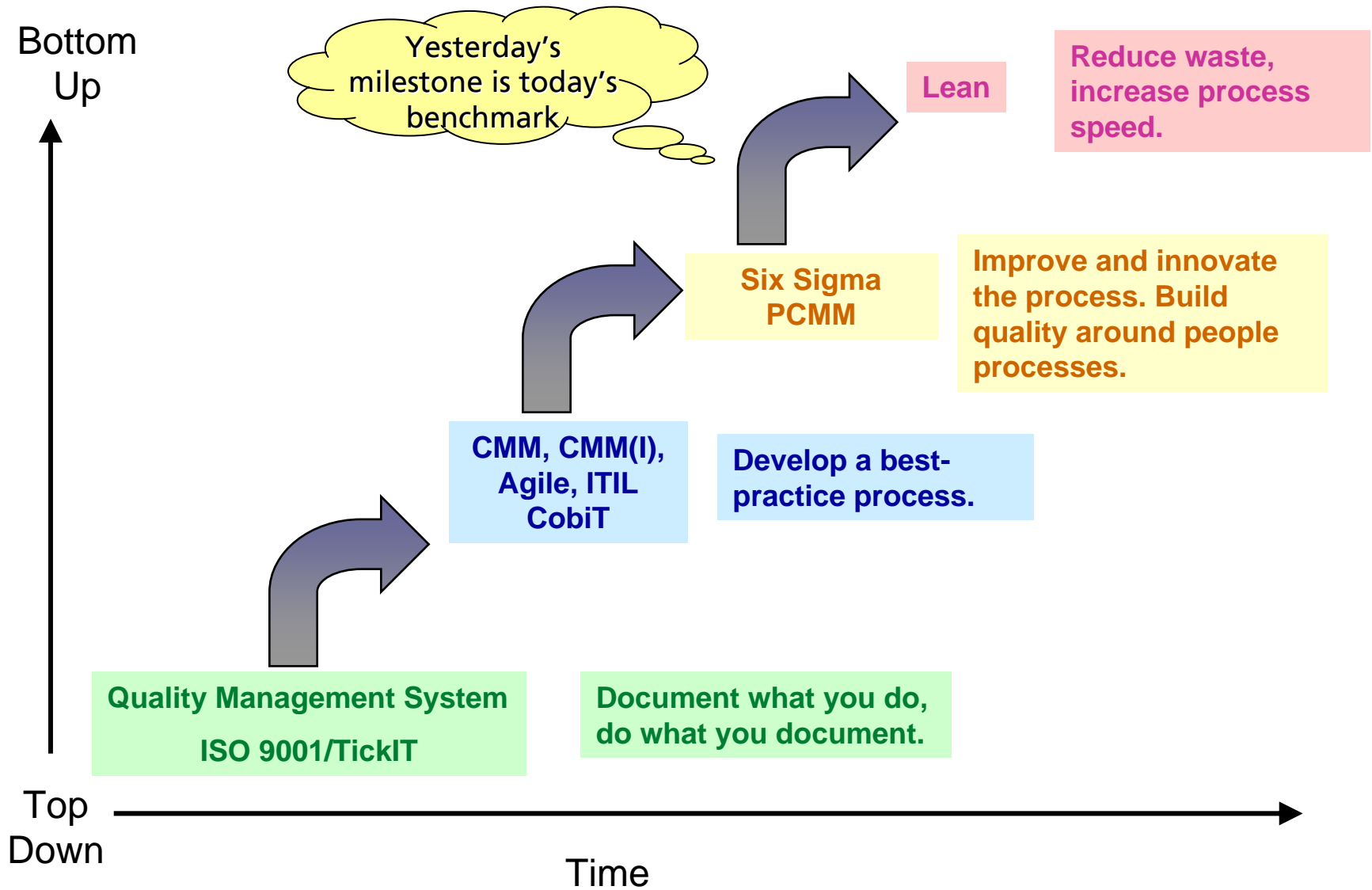
Business Challenges



Meeting ever increasing customer needs and demands



The Journey so far



The Journey going forward

Traditional view

Processes

- o Doing things well
- o Internal silos
- o Quality
- o Certifications
- o Value driven

Process Maturity



Contemporary view

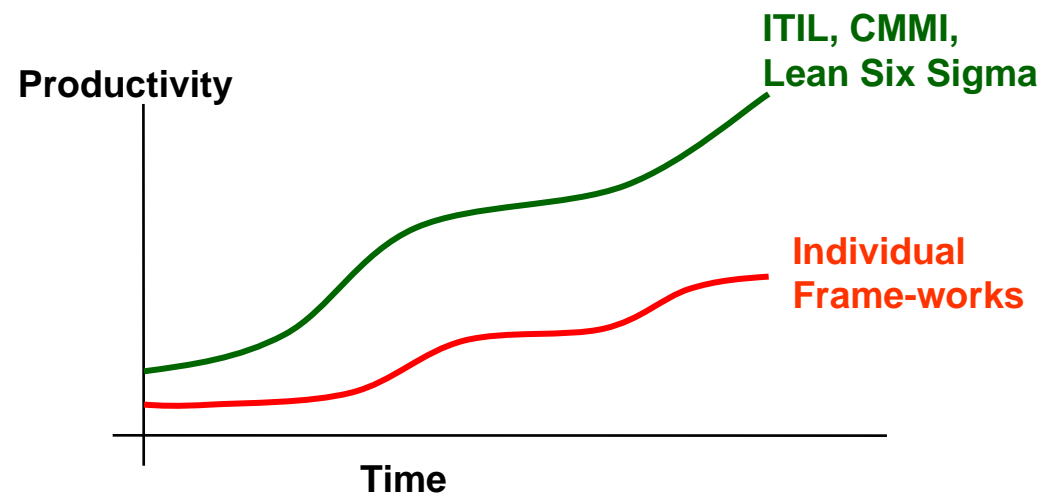
Defects, productivity, waste

- o Doing the right things well
- o End-to-end, integrated supply chain
- o Operational effectiveness
- o Achieving enterprise goals
- o KPI and value driven

Process, People and automation

The Journey going forward

- ◆ These approaches address the same objective – Efficiency and High Quality
- ◆ Maximise productivity, product quality, defect level and time
- ◆ All these approaches lead to continuous improvements and can be integrated so that they yield synergy



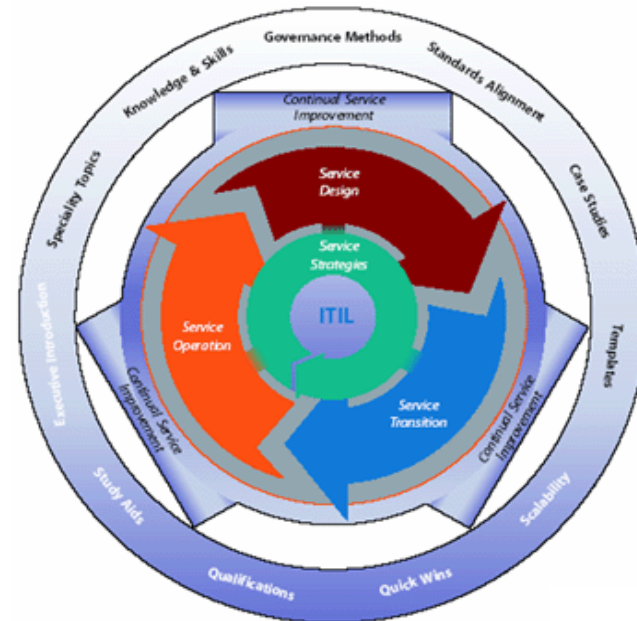
What are these frameworks / approaches?

- ◆ ITIL – a framework for IT Service Management. It consists of set of guidelines that specify what an IT organization should do based on industry best practice.
- ◆ CMMI – a framework for managing processes and integrating activities across an organization
- ◆ Lean – a set of principles for efficient and effective processes
- ◆ Six Sigma – a problem solving approach that addresses specific improvement needs through improvement projects

What is ITIL?

- ◆ ITIL (IT Infrastructure Library) provides a framework of Best Practice guidance for IT Service Management and since its creation, ITIL has grown to become the most widely accepted approach to IT Service Management in the world.

- ◆ Business and IT integration
- ◆ Value Service Network Integration
- ◆ Dynamic Service Portfolios
- ◆ Service management Lifecycle

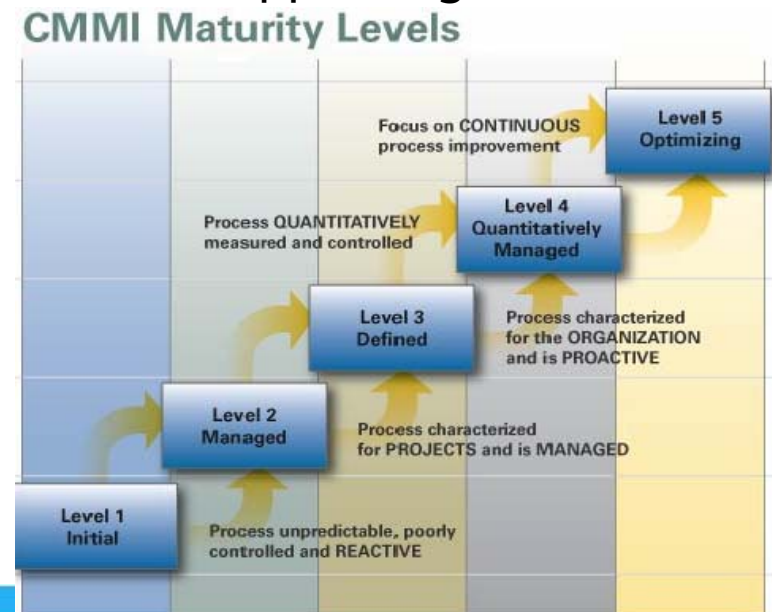


Service Life cycle focus

ITIL integrates IT and business into a single ecosystem

What is CMMI ®?

- ◆ Capability Maturity Model Integration is a process improvement approach that provides organizations with the essential elements of effective processes.
- ◆ It can be used to guide process improvement across a project, a division or an entire organization.
- ◆ CMMI® helps integrate traditionally separate organizations functions, set process improvement goals and priorities, provide guidance for quality processes and provide a point reference for appraising current processes.
- ◆ A basis for planning improvements to the business processes



Focus on CMMI ® levels

- ◆ Levels 2 and 3 address the definition of engineering and management processes
 - Organizational Process Definition
 - Organizational Process Focus
 - Others defining specific disciplines

 - ◆ Levels 4 & 5 address the control and improvement of those processes
 - Organizational Process Performance (OPP)
 - Quantitative Project Management (QPM)
 - Causal Analysis and Resolution (CAR)
 - Organizational Innovation and Deployment (OID)
- } QM

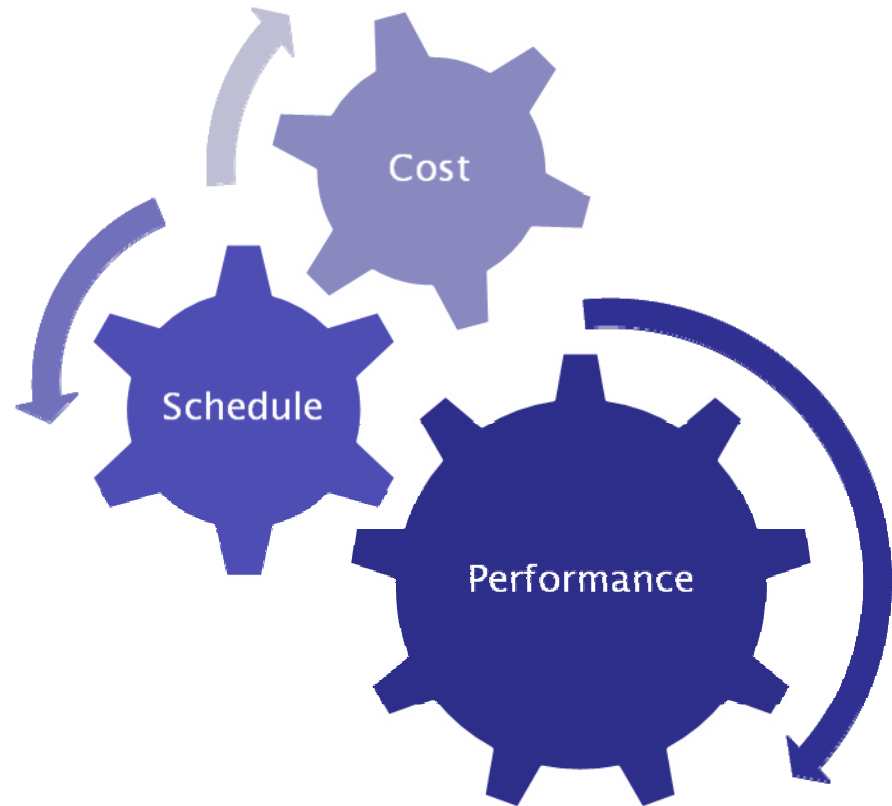
What is Lean?

“Lean is a philosophy that shortens the timeline between the customer order and the shipment by eliminating waste.”

John Shook, Toyota’s first American manager in Japan

“Lean is the search for perfection through the elimination of waste and insertion of practices that contribute to reduction in cost and schedule while improving performance of products”

Lean Aerospace Initiative, MIT, WP99-01-91



- Lean is not a process but a mindset
- A grassroots productivity enabler
- Action oriented: focused on NVA elimination
- Difficult to imitate

The Toyota Way – Key Principles

Continuous improvement

Go see yourself to understand thoroughly (Genchi Genbutsu)
Make decisions slowly by consensus, thoroughly considering all options; implement rapidly
Continuous organization learning thru Kaizen



People & Partners

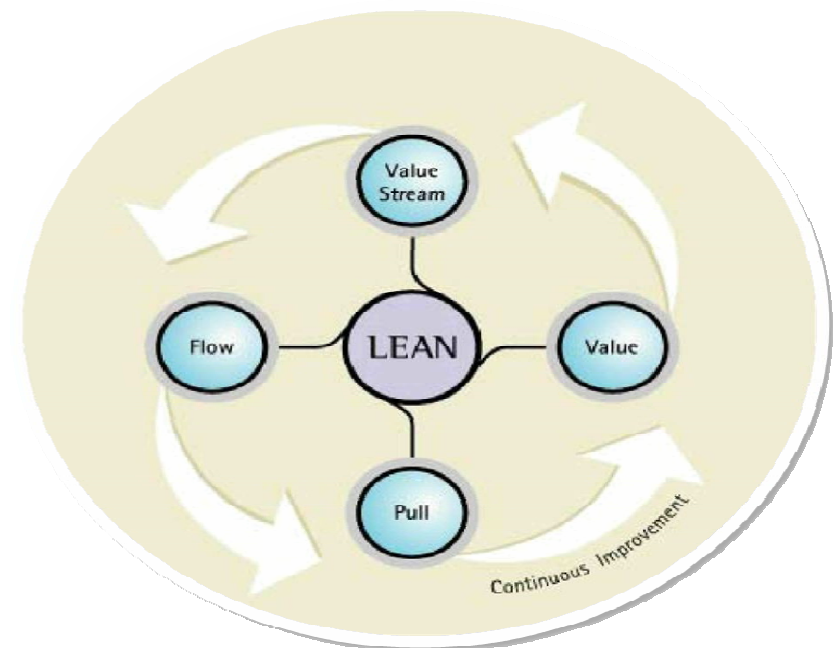
Respect challenge & grow

Grow leaders who live the philosophy
Respect, develop and challenge your people and teams
Respect, challenge and help your suppliers

Process

Eliminate Waste

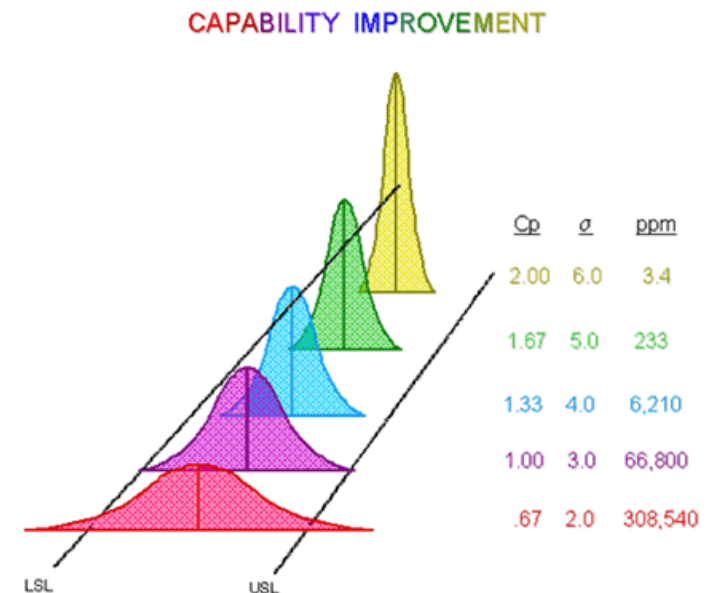
Create process flow to surface problems
Use pull systems to avoid overproduction
Level out the workload (heijunka)
Stop when there is a quality problem (jidoka)
Standardize tasks for continuous improvement
Use visual control so no problems are hidden
Use only reliable, thoroughly tested technology



What is Six Sigma?

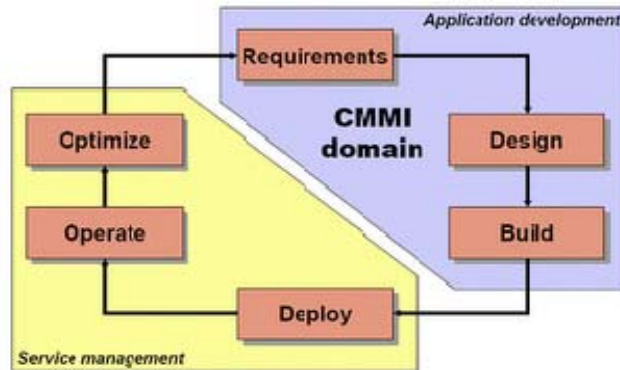
- ◆ Six Sigma is a set of practice originally developed by Motorola to systematically improve process by eliminating defects
- ◆ Refers to ability of highly capable process to produce output within specification

Define	Measure	Analyze	Improve	Control
Benchmark Contract/Charter Kano Model Voice of the Customer Voice of the Business Quality Function Deployment	GQ(I)M and Indicator Templates Data Collection Methods Measurement System Evaluation	Cause & Effect Diagrams/Matrix Failure Modes & Effects Analysis Statistical Inference Reliability Analysis Root Cause Analysis, including 5 Whys Hypothesis Test	Design of Experiments Modeling ANOVA <u>Tolerancing</u> Robust Design Systems Thinking Decision & Risk Analysis PSM Performance Analysis Model	Statistical controls: <ul style="list-style-type: none"> Control Charts Time Series Methods Non-Statistical controls: <ul style="list-style-type: none"> Procedural Adherence Performance Management Preventative Measures
Basic Tools (Histogram, Scatter Plot, Run Chart, Pareto Chart, Cause & Effect Diagram, Control Chart, Descriptive Statistic), Baseline, Process Flow Map, Project Management, Management by Fact, Sampling Techniques, Survey Methods, Defect Metrics.				



ITIL and CMMI [®]

- ◆ CMMI and ITIL improves the Software Development Process and Software Quality and reduces the Cost Of Quality



ITIL

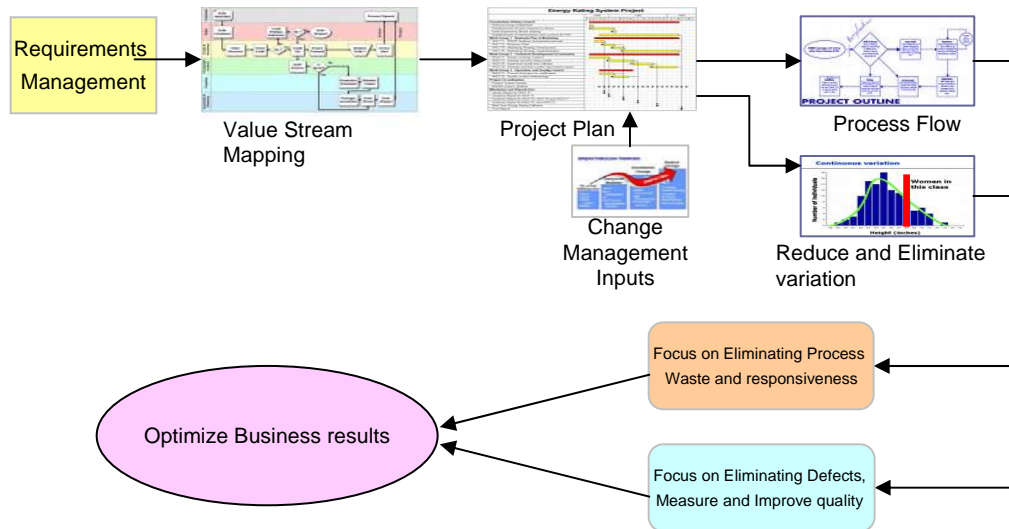
- ❑ The focus for ITIL is Service Management/operations
- ❑ ITIL in IT operations and services
- ❑ Addresses IT operations issues, such as security, change and configuration management, capacity planning, troubleshooting and service desk functions.
- ❑ Framework for the operations and infrastructure side of IT, particularly for IT Services.

CMMI

- ❑ The focus for CMMI is software development, integration, deployment and maintenance
- ❑ CMMI in application development, ICT Infrastructure projects
- ❑ Geared specifically to software development organizations, and focuses on continuous improvement
- ❑ The de facto quality standard for software development processes

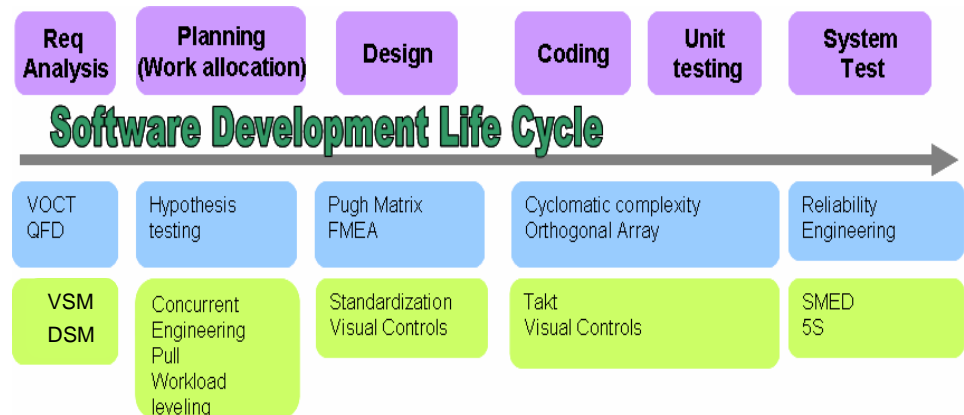
Lean and Six Sigma

- ◆ **Lean Six Sigma** is a business improvement methodology which combines tools from both Lean Manufacturing and Six Sigma



- ◆ Lean manufacturing focuses on speed
- ◆ Six Sigma focuses on quality
- ◆ Result is better quality faster

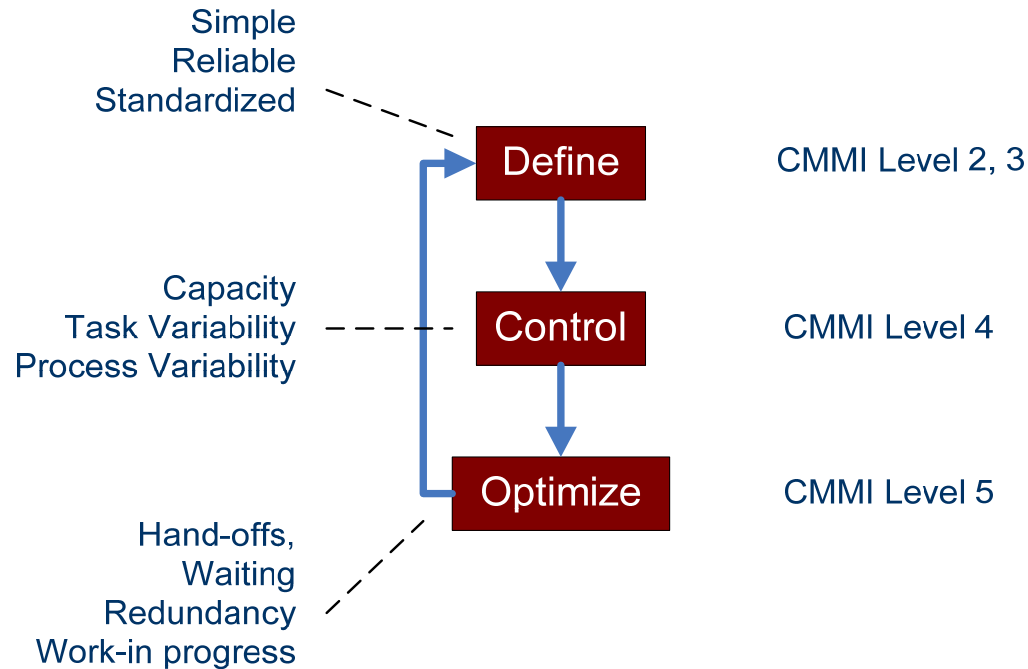
Combination of tools utilization to optimize the improvement results



Lean and Six Sigma tools

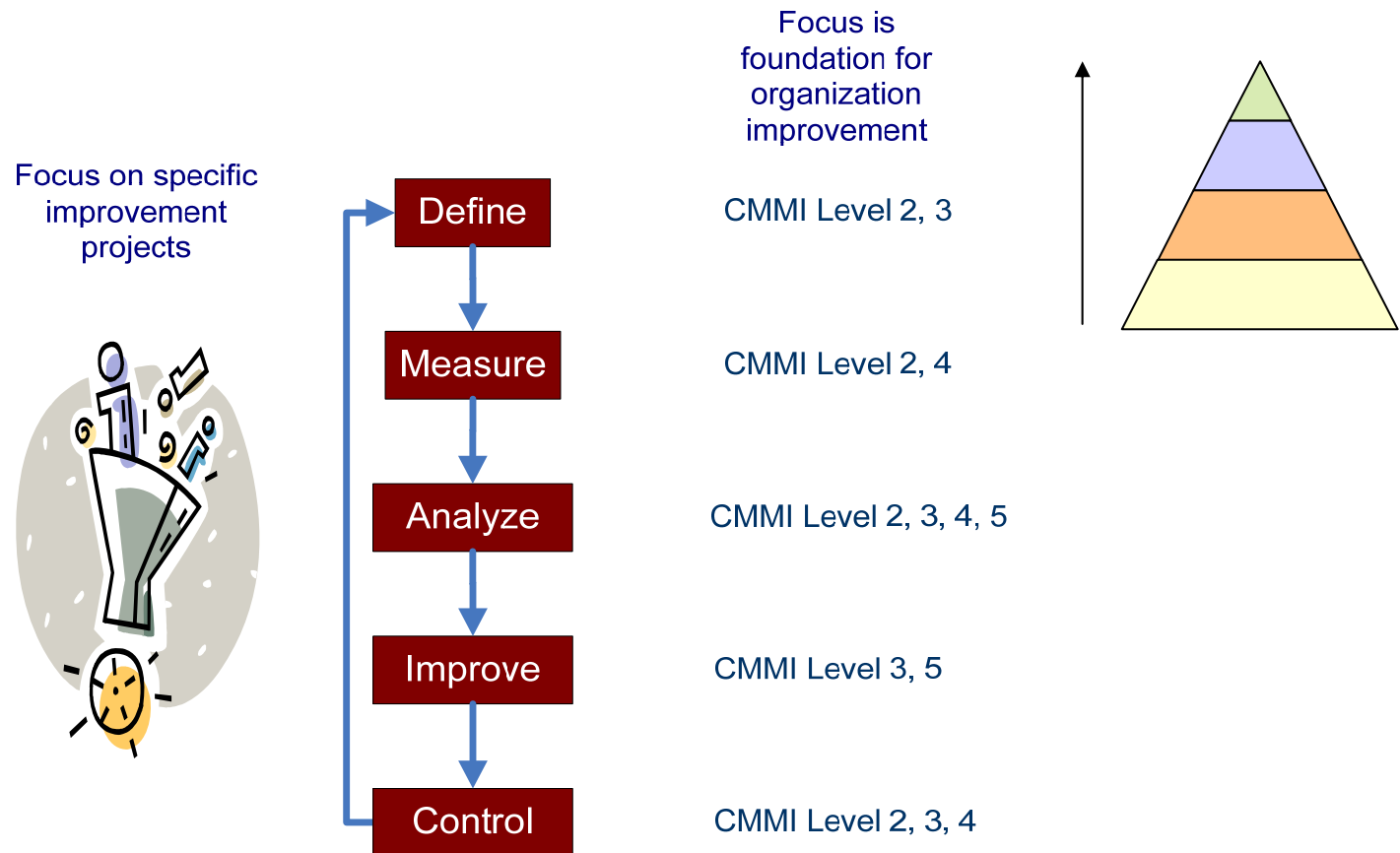
CMMI [®] and Lean Six Sigma

- ◆ **Lean CMMI** is an approach to software engineering process improvement that integrates agile computing methods with process design and deployment for organization's wishing to improve software engineering capability and achieve desired maturity level

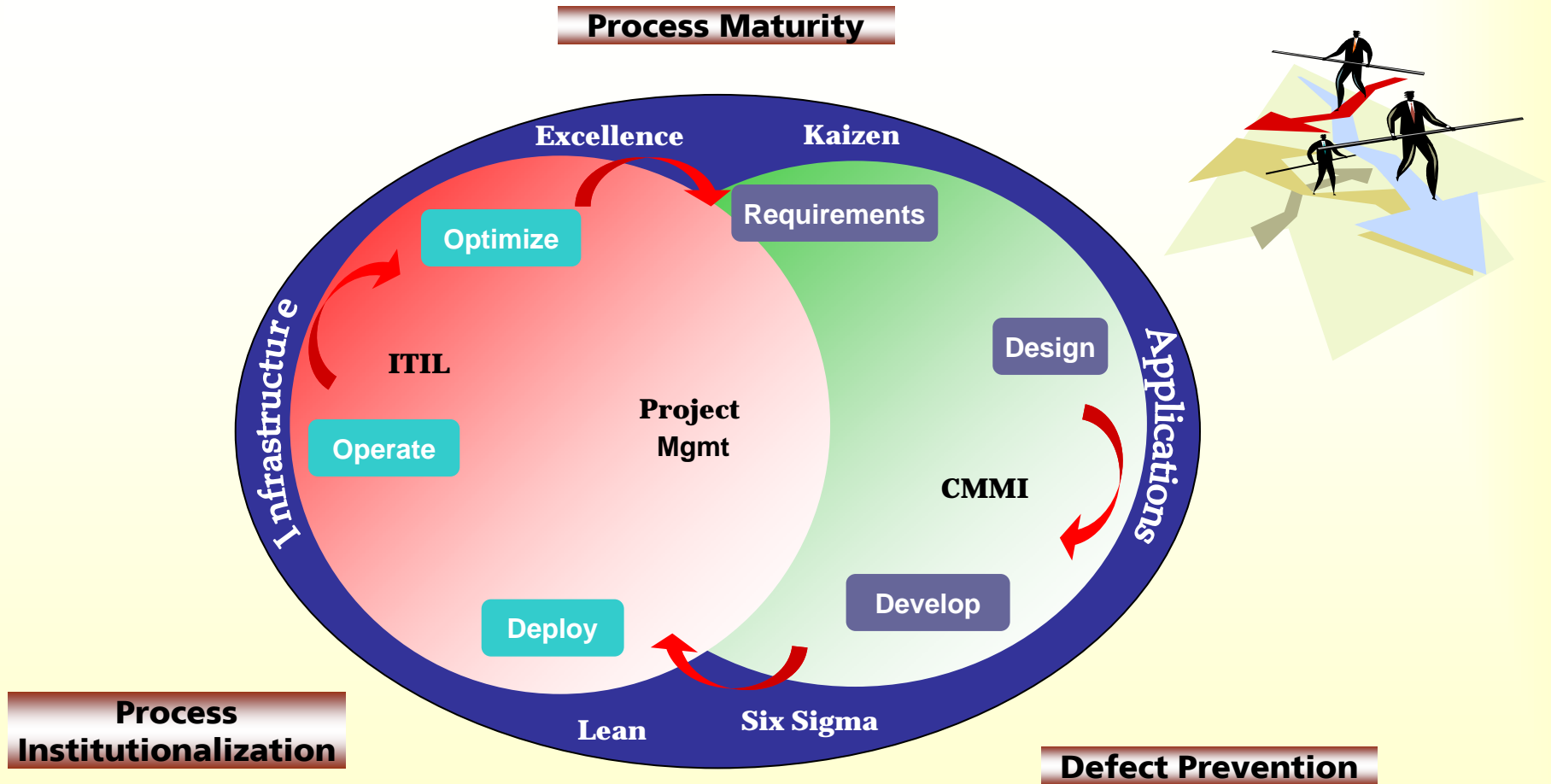


CMMI[®] and Lean Six Sigma

- ◆ **Six Sigma** identifies *what* activities are used for improvement (DMAIC, DMADV)
- ◆ CMMI identifies *how* those activities might be implemented



Integrating ITIL, CMMI and Lean Six Sigma



Conclusions and Next Steps

CMMI translates many Six Sigma concepts into software and systems terminology

Six Sigma is difficult for Level 1 organizations to implement however Lean principles do apply

ITIL, Lean, Six Sigma and CMMI based process improvement are complementary

Incorporating Lean principles and Six Sigma techniques helps organizations working towards level 4 and 5 to deliver the best business results

Organization has well defined and documented processes that collectively have been demonstrated to deliver superior IT services to the business.

The processes are integrated and operating at a measurable and standardized maturity level.

Conclusions and Next Steps

Integrated Framework adoption in Software Services Delivery – A Unique Initiative

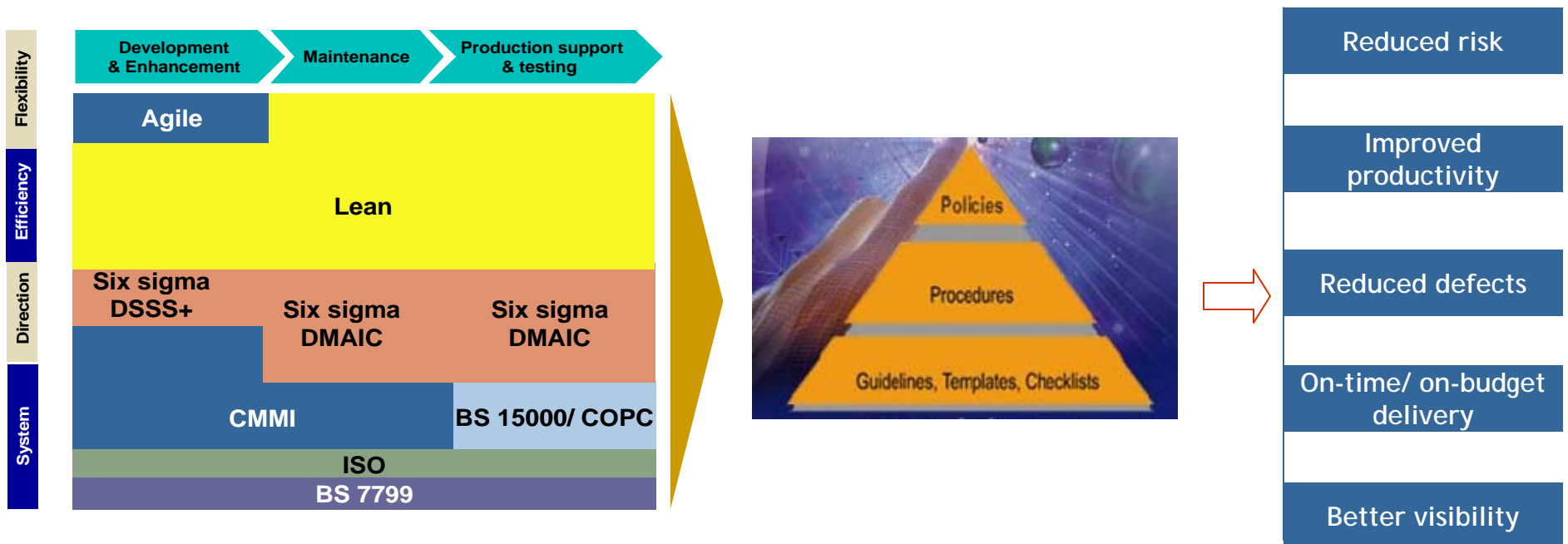
Focus on Operational effectiveness

Continuous improvement program in place

Main Results are in reducing Cycle time, improving throughput, reducing Crisis Situations – Overall improving productivity

Next Steps – collaborating with our clients in applying end-to-end solutions in creating Unique Value through a synergistic, symbiotic and strategic partnership

Case Study : Establishing maturity



- ISO – basic foundations of documented systems
- CMM & CMMI – software engineering practices
- ITIL – to focus on Service Management
- Six sigma – customer focused data driven time bound improvements
- Lean – for org level waste elimination & continual improvement
- Agile – to build in flexibility and adaptability

Thank You