

Aligning CMMI® Implementation & Organizational Strategy for Better Competitive Advantages

SEPG 2011


Portland, Oregon

March 22, 2011



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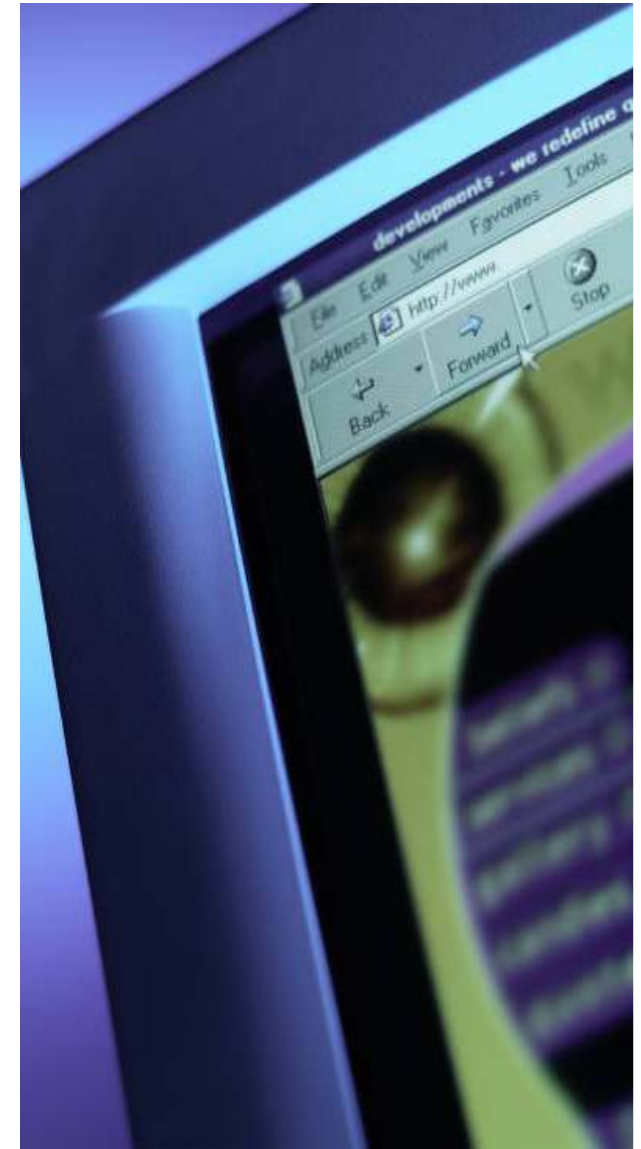
Ron Radice

Software Technology Transition 

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Highlights

- What Is Competitive Advantage?
- Fundamental Factors That Drive The Business
- Key Business Objectives and Priorities
- Key Business Priorities Empowered By CMMI
- Practical Process Implementation Criteria
- Tri-directional Enablement Of Business
- Challenges Of Implementing CMMI
- Sample Cases on Evolution From Low Maturity PAs to High Maturity PAs
- Effective Blending High Maturity with ML 2 & 3
- Alignment of Business Objectives
- Sustenance Of High Maturity Level
- Improved Strategy For CMMI Value Proposition



What Is Competitive Advantage?

“An organization's ability to learn and translate that learning into action rapidly, is the ultimate competitive advantage.”

“If you don't have a competitive advantage, don't compete.”

- By Jack Welch

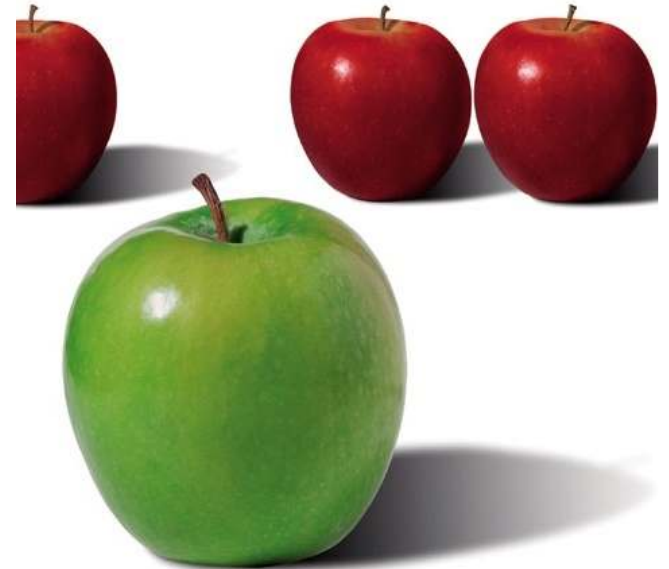
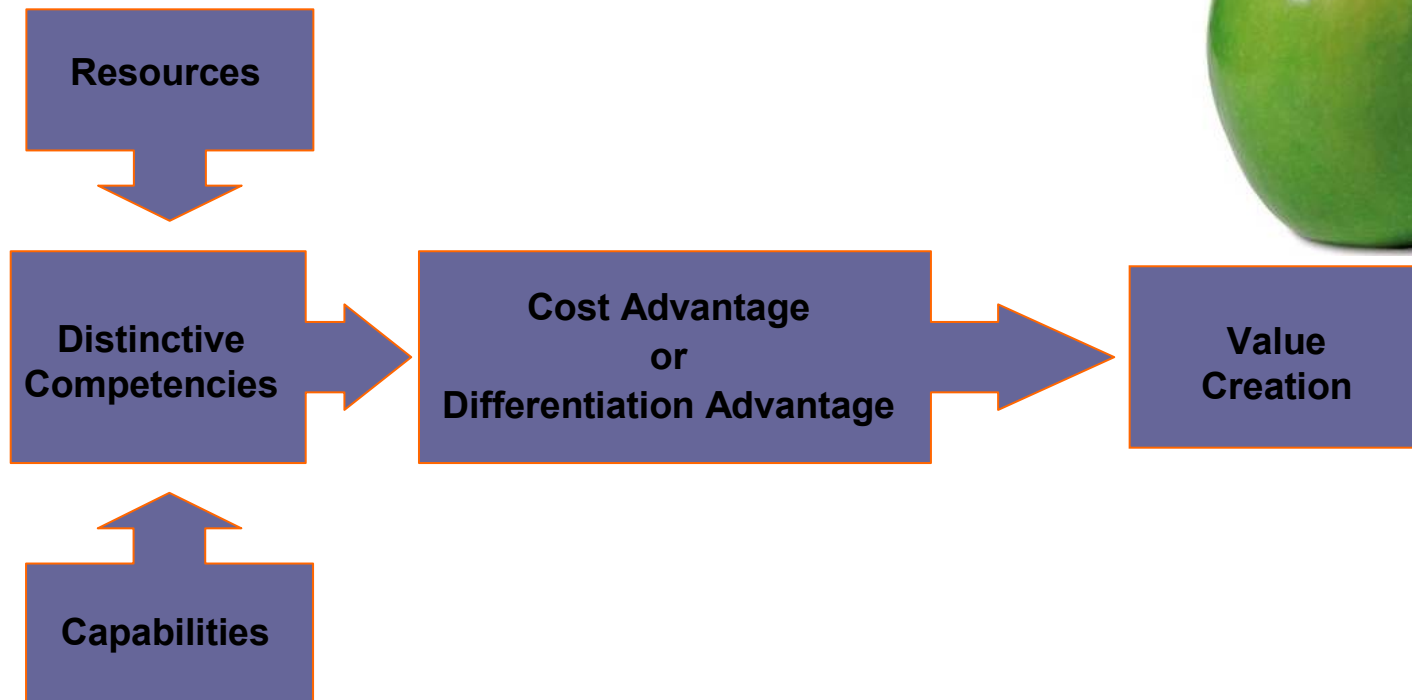


John Francis "Jack" Welch, Jr. is an American businessman and author. He was Chairman and CEO of General Electric between 1981 and 2001

Fundamental Factors That Drive the Business:

When a firm sustains profits that exceed the average for its industry, the firm is said to possess a competitive advantage over its rivals.

Proposed Model of Competitive Advantage



Key Business Objectives and Priorities:

- To have a strong competitive edge in a rapidly evolving marketplace, you will want to take advantage of opportunities to lead / advance change and avoid simply reacting to change.
- Improve the ability to predict costs and revenues, and find ways to raise productivity and lower expenses. To help anticipate problems and develop ways to address them early.

Key Business Objectives of IT Industries

Enhance customer satisfaction

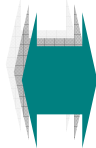
Create value for the stockholders

Produce quality products or services

Be an employer of choice

Increase market share.

Implement cost savings and best practices



Key Business Priorities

Productivity

Maximizing Efficiency and Eliminating Waste

Technology

Measurable Business Value Through Technology Evaluation & Alternates

Quality / Control

Improving Client Experience

People

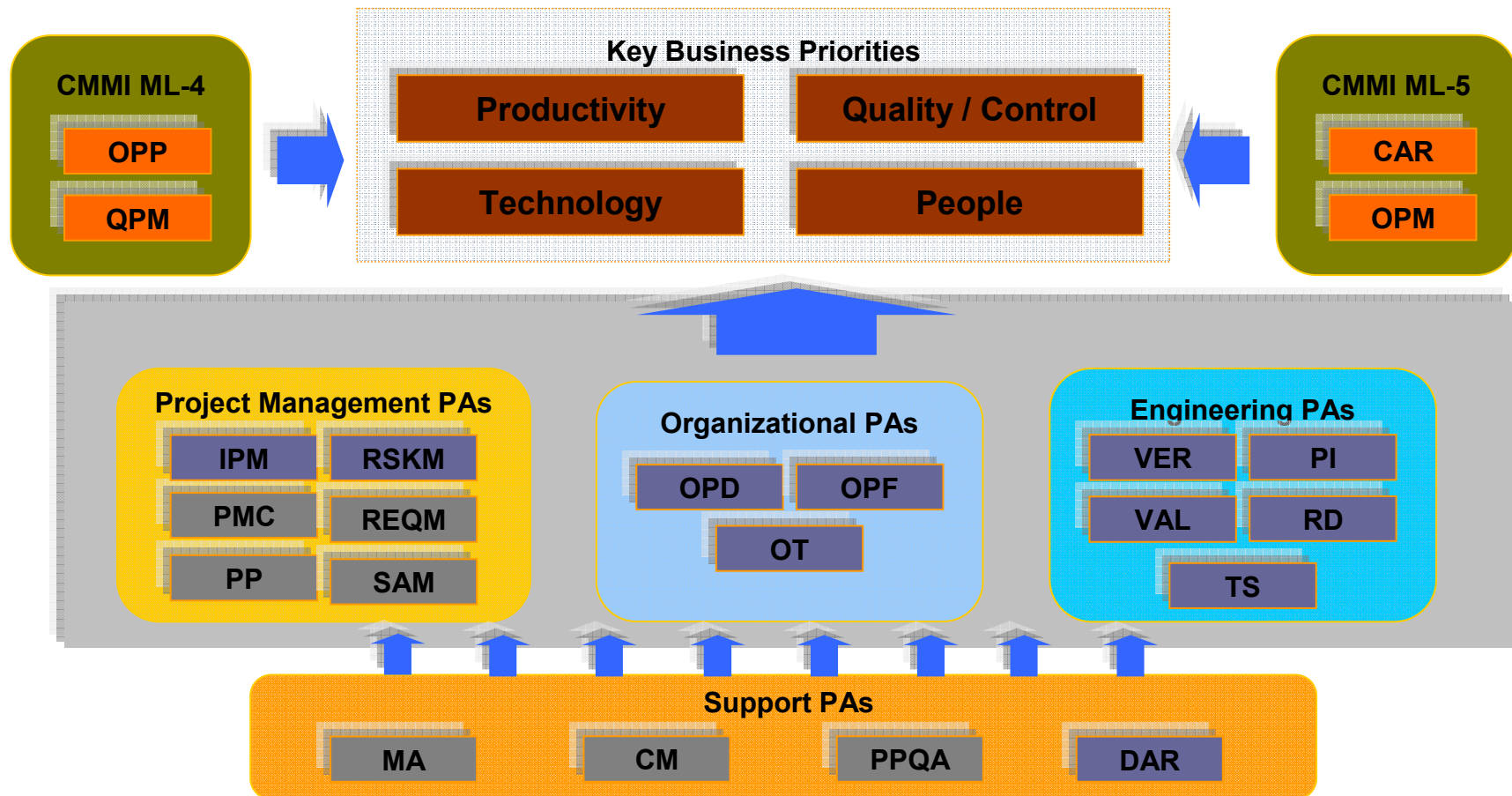
Creating Dynamic and Performance-Oriented Culture



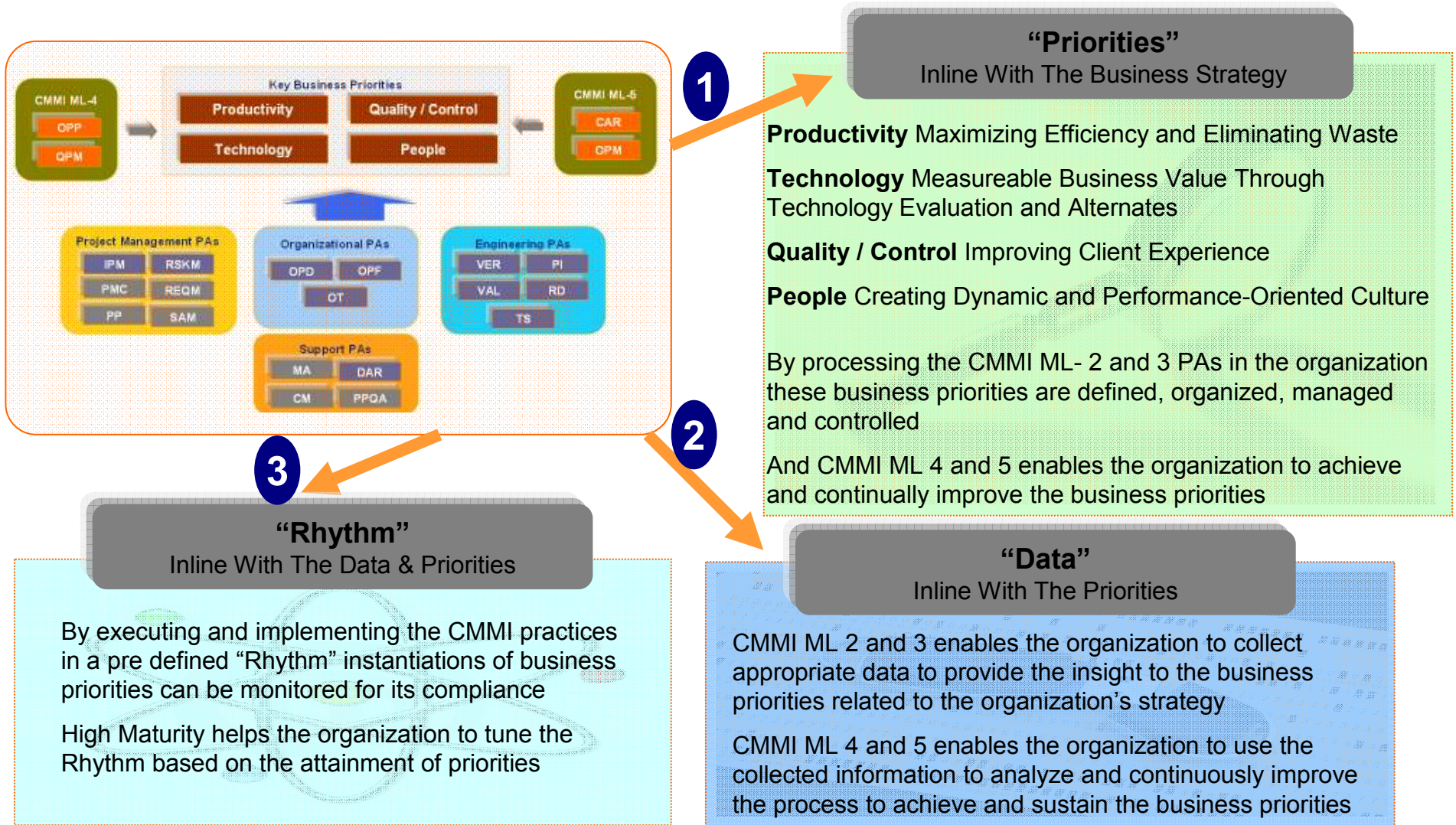
Empowered and Managed Through
CMMI Best Practices

Key Business Priorities Empowered by CMMI

Systematic implementation of CMMI practices enable the business to achieve business priorities



Tri-directional Enablement Of Business Thru CMMI Implementation:



Repetitive Challenges in CMMI Implementation:

CMMI ML- 4 & 5 PAs

OPP

CAR

QPM

OPM

- ❖ CMMI is often considered as an overhead item and when budget adjustment is done this overhead item is one of first targets for reduction
- ❖ HM level practices are treated separately from day to day operational / transactional activities for managing the project and delivering the project deliverables.
- ❖ The delivery organization's day-to-day operational activities are aligned to CMMI Level 2 and Level 3 practices .
- ❖ After the successful completion of formal appraisal some or most of the HM level practice implementation or its control is lost, as they are not appropriately blended with day to day delivery operational activities
- ❖ CMMI's value proposition beyond getting new business is not understood

Tactical "Top down"

Operational "Bottom Up"

Business Drivers

Will traditional way of implementing ML 2 and ML3 help me in sustaining High Maturity Level?
What other ways of implementing ML 2 and ML 3?

CMMI ML - 2 & 3 PAs

IPM	RSKM	MA
PMC	REQM	CM
PP	SAM	OPD
OT	VER	PI
DAR	PPQA	OPF
VAL	RD	TS



Blending High Maturity With Low Maturity

CMMI ML-4 & 5 PAs

OPP

CAR

QPM

OPM

- ❖ Organization need to develop and improve the processes by blending appropriately the high maturity and low maturity concepts inline with organizational business needs and add business value.
- ❖ If an organization is consistently meeting it's business objectives the CMMI brings value in enabling innovation and improving standardization / consistencies
- ❖ High Maturity organization needs to have day to day operational activities which are aligned with CMMI HML practices.
- ❖ This will not only help to sustain performance of CMMI high maturity level practices but also enhance the CMMi value proposition beyond appraisal/certification and bidding/proposal requirements etc.

Tactical "Top down"

Business Drivers

Operational "Bottom Up"

CMMI ML-2 & 3 PAs

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MA

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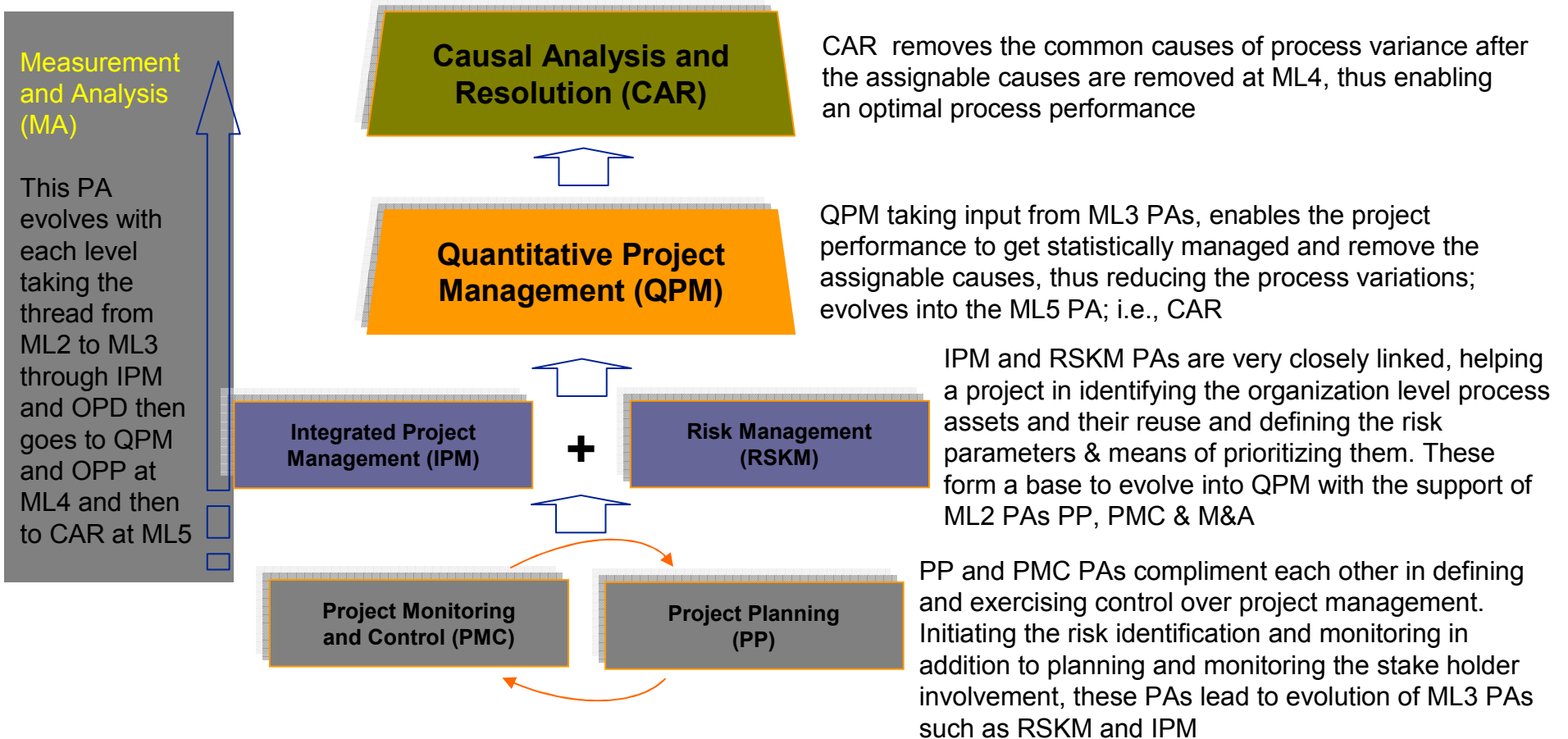
RD

TS



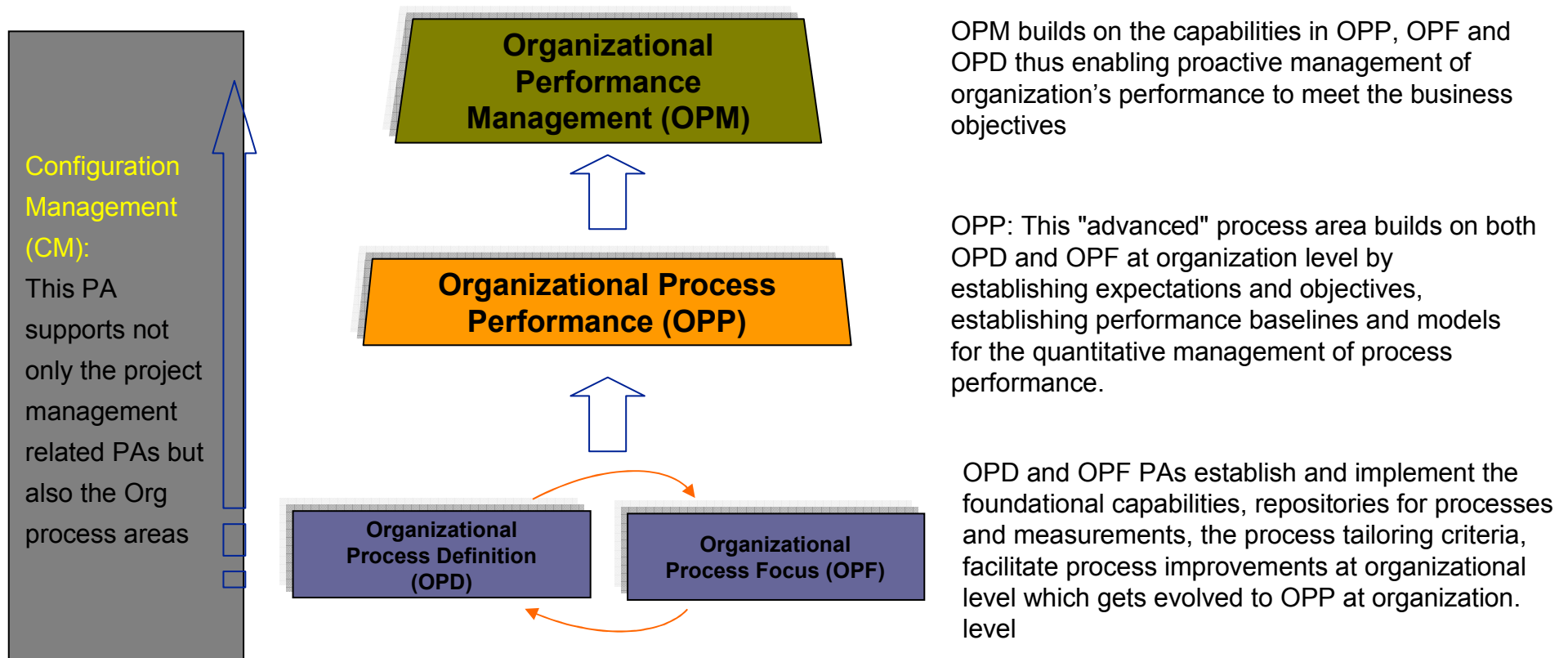
Sample Cases – 1: Evolution From Low Maturity PAs to High Maturity PAs

There is a tight relationship between PP, PMC in ML2 which evolves to IPM & RSKM and then evolves to QPM and CAR at ML 4 & 5



Sample Cases – 2: Evolution From Low Maturity PAs to High Maturity PAs

There is a tight relationship between four of these process areas. OPP builds on the capabilities in OPF and OPD. OPM builds on the capabilities OPP.



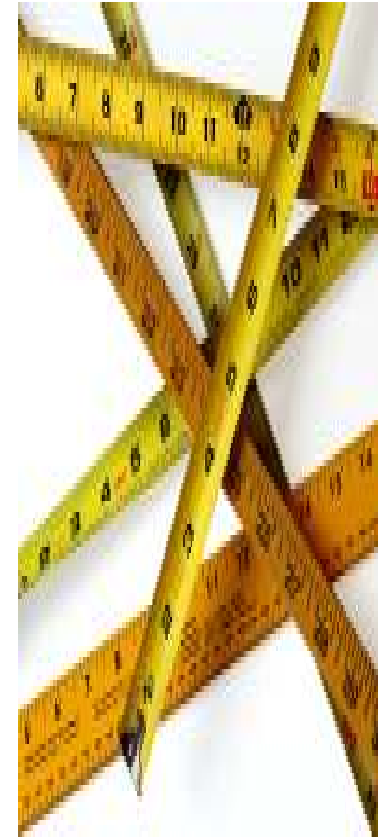
Examples of Effective Blending High Maturity with ML 2 and 3: Critical Requirements of PP and PMC with respect to OPP, QPM and CAR

1. Estimates should be established in a "Probabilistic" manner after understanding the process variance from historical data
2. WBS should be developed in a way that can facilitate critical Sub-process identification
3. Process Performance made manageable through the defined Process Performance Baselines and Process Performance Models
4. Risks should be predicted for their occurrence using learned level 4 capabilities with statistics
5. Milestones and Tasks are monitored using the Sub-process Performance and Process Performance Baselines
6. Problems and issues are quantified and related Potential Failure Modes can be identified statistically
7. Root causes and corrective / preventive actions are identified statistically



More Explanation on Effective Blending High Maturity with ML 2 and 3 -1

- Estimating with knowledge of process variance and probabilistic approach using Organization's/Project's Process Capability and the Process Performance Models.
- WBS to be developed for all milestones, through which the sub-processes can be identified and it can be statistically managed
- Historical data and PPM can be used to transform the attributes of the work products into estimates of the labor hours and cost.
- Project plan should demonstrate that the process performance is manageable through the defined PPBs and PPMs



More Explanation on Effective Blending High Maturity with ML 2 and 3 -2

- Risks should be predicted using the process performance models for their probability of occurrence
- Data management plan can include the collection and storage of all the data related to process performance objectives, baselines and sub processes at ML 2
- Process, staffing and infrastructure requirements are planned in a probabilistic way
- Milestones and tasks are monitored against the sub process performance and process performance baselines in PMC
- Problems, issues are collected and quantified. Ensure those problems, issues, are collected based on the reviews and the performance of process performance objectives

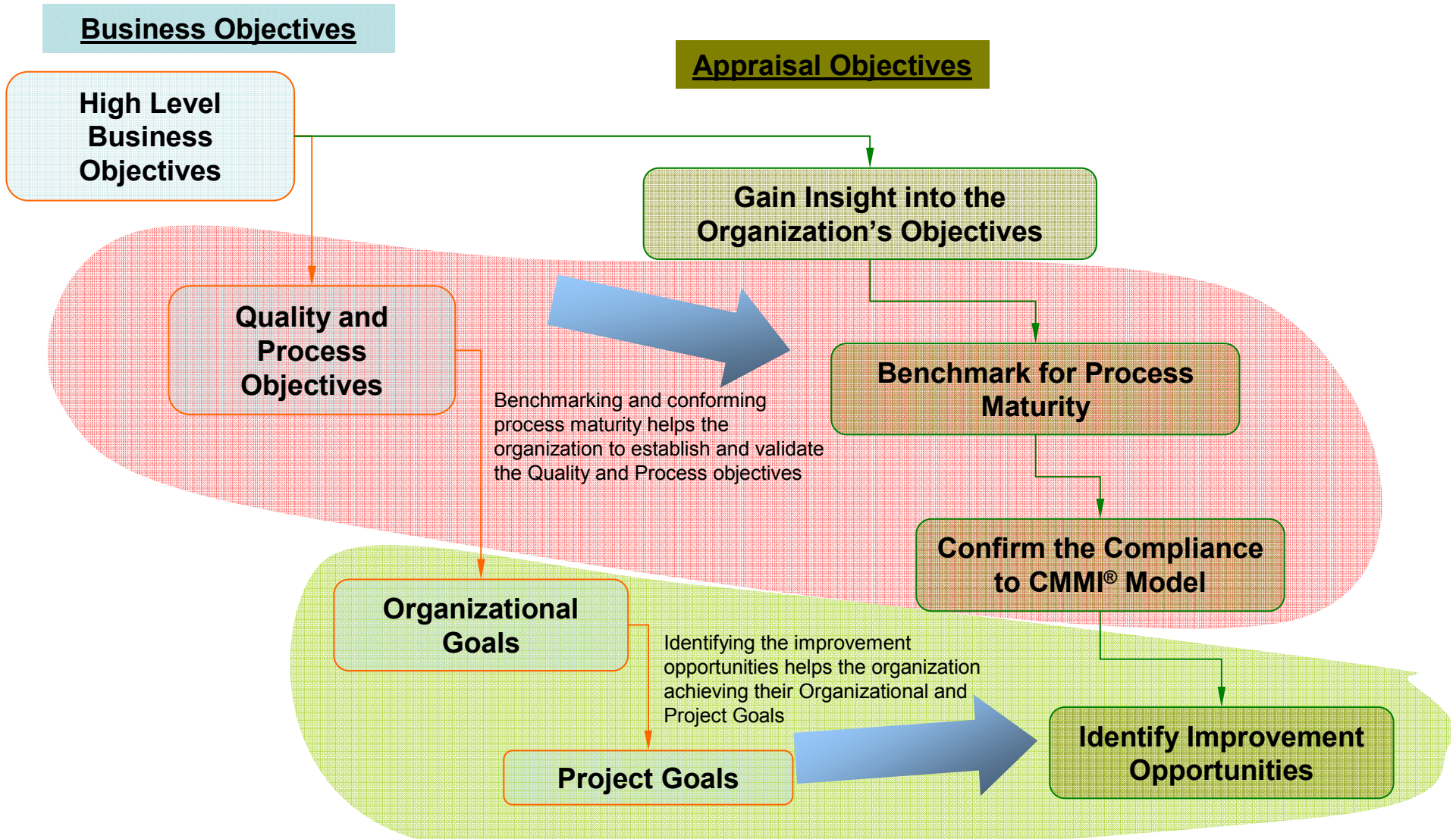


More Explanation on Effective Blending High Maturity with ML 2 and 3 -3

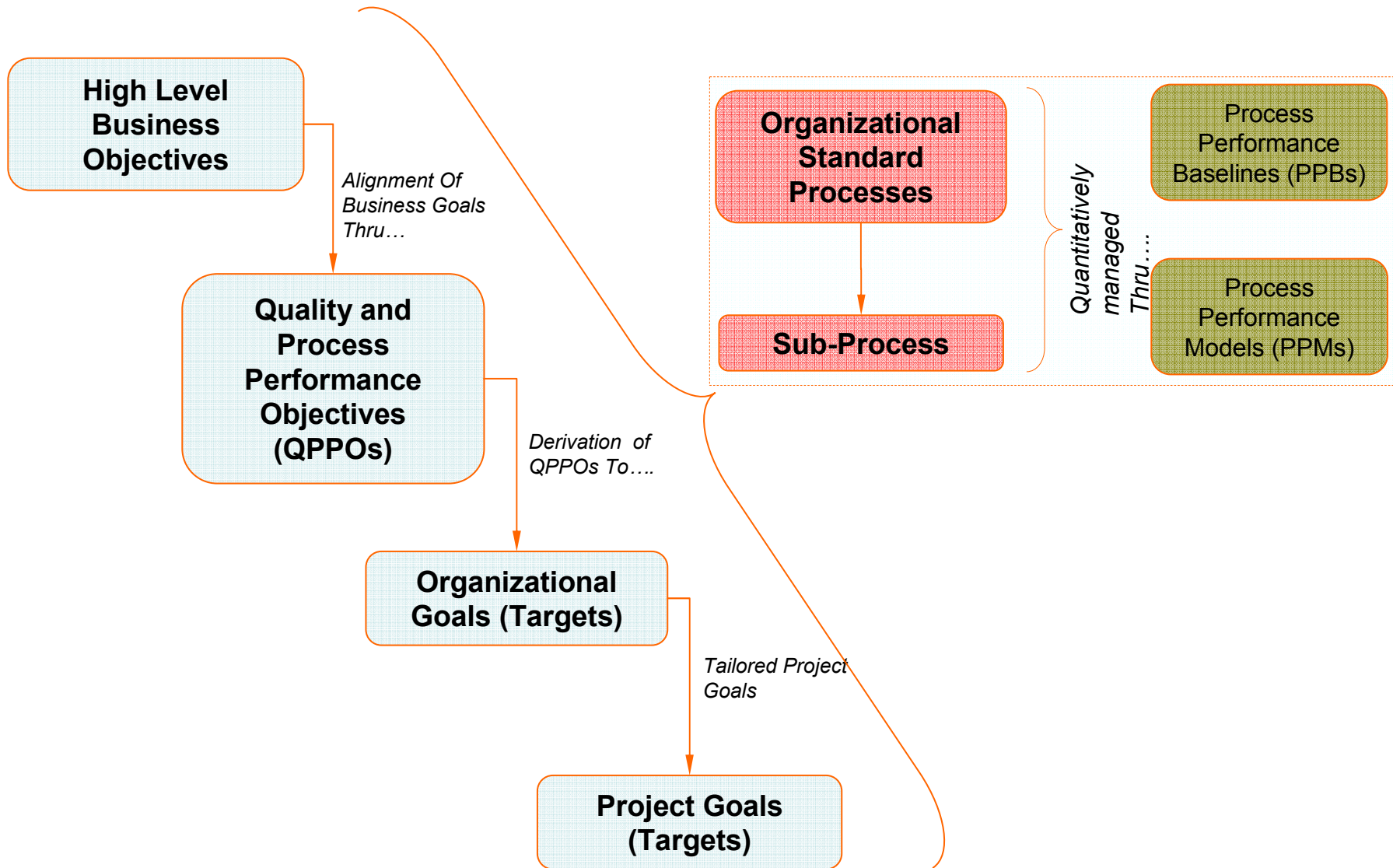
- Analyze the problems, issues using various statistical techniques and ensure whether the Potential Failure Modes are identified and the process variance is understood
- Identify the potential solutions for the identified causes using various statistical techniques (what-if analysis). Ensure whether the necessary actions are taken to prevent it occurring in future
- Monitor the solution implementation by using performance analysis to know that the implementation of corrective / preventive actions have improved process performance
- Analyze the implementation through predicting impact, benefit, and ROI and then share the learning



Alignment of Business Objectives and CMMI Appraisal Objectives

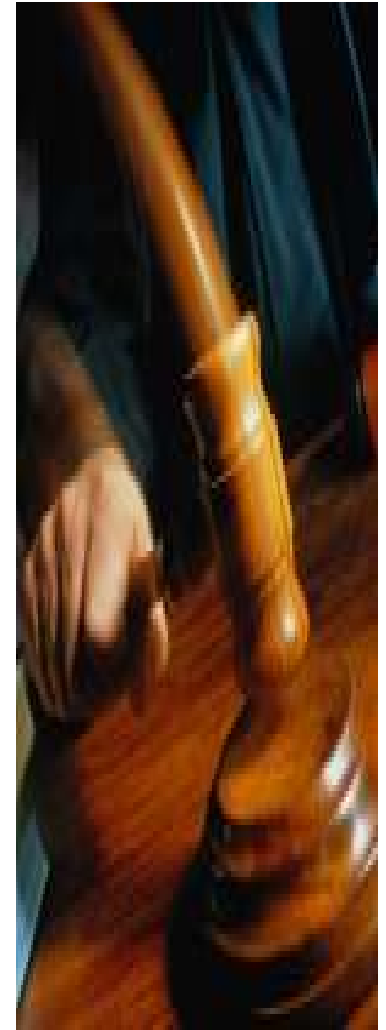


Alignment of Business Objectives In-line With High Maturity Level



Proposed Improved Strategy For CMMI Value Proposition :

- Drive Process Excellence / Improvement inline with Business Value Add
- Establish continual improvement culture leveraging CMMI as both bottom-up & top-down process improvement strategy
- Use QMS -OSSP as work flow automation model for execution and not as only a reference model
- Demonstrate improvement as a criteria for CMMI appraisal
- Create CMMI value proposition beyond proposal / bidding



Abbreviations Used

- PMC Project Monitoring and Control
- PP Project Planning
- REQM Requirements Management
- SAM Supplier Agreement Management
- CM Configuration Management
- MA Measurement and Analysis
- PPQA Process and Product Quality Assurance
- IPM Integrated Project Management
- RSKM Risk Management
- OPD Organizational Process Definition
- OPF Organizational Process Focus
- OT Organizational Training
- PI Product Integration
- RD Requirements Development
- TS Technical Solution
- VAL Validation
- VER Verification
- DAR Decision Analysis and Resolution
- OPP Organizational Process Performance
- QPM Quantitative Project Management
- CAR Causal Analysis and Resolution
- OPM Organizational Performance Management



Any questions or comments

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