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Using Risk Management to Assess Effective Performance under ISO 9001 in COTS Implementations

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McLean, VA

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- Special considerations for COTS/ERP implementations
- Context of risk management
- Using risk management to drive effective performance

Overview

- COTS implementations require significant enterprise involvement
  - Especially ERP (PeopleSoft, SAP, MAXIMO)
  - Install-then-configure versus requirements-develop-deploy lifecycle
  - Developers must understand the business as well as the product
  - Enterprise leads and SMEs must be pre-trained in the product
- Use risk management to estimate future performance
  - Give advanced view versus “rear-view”
  - A scorecard approach gives quick insight to leadership and project team
- Define effective performance based on ISO 9001 criteria
  - Supplement ISO 9001 criteria with other implementation-specific critical success factors

Key business management questions:

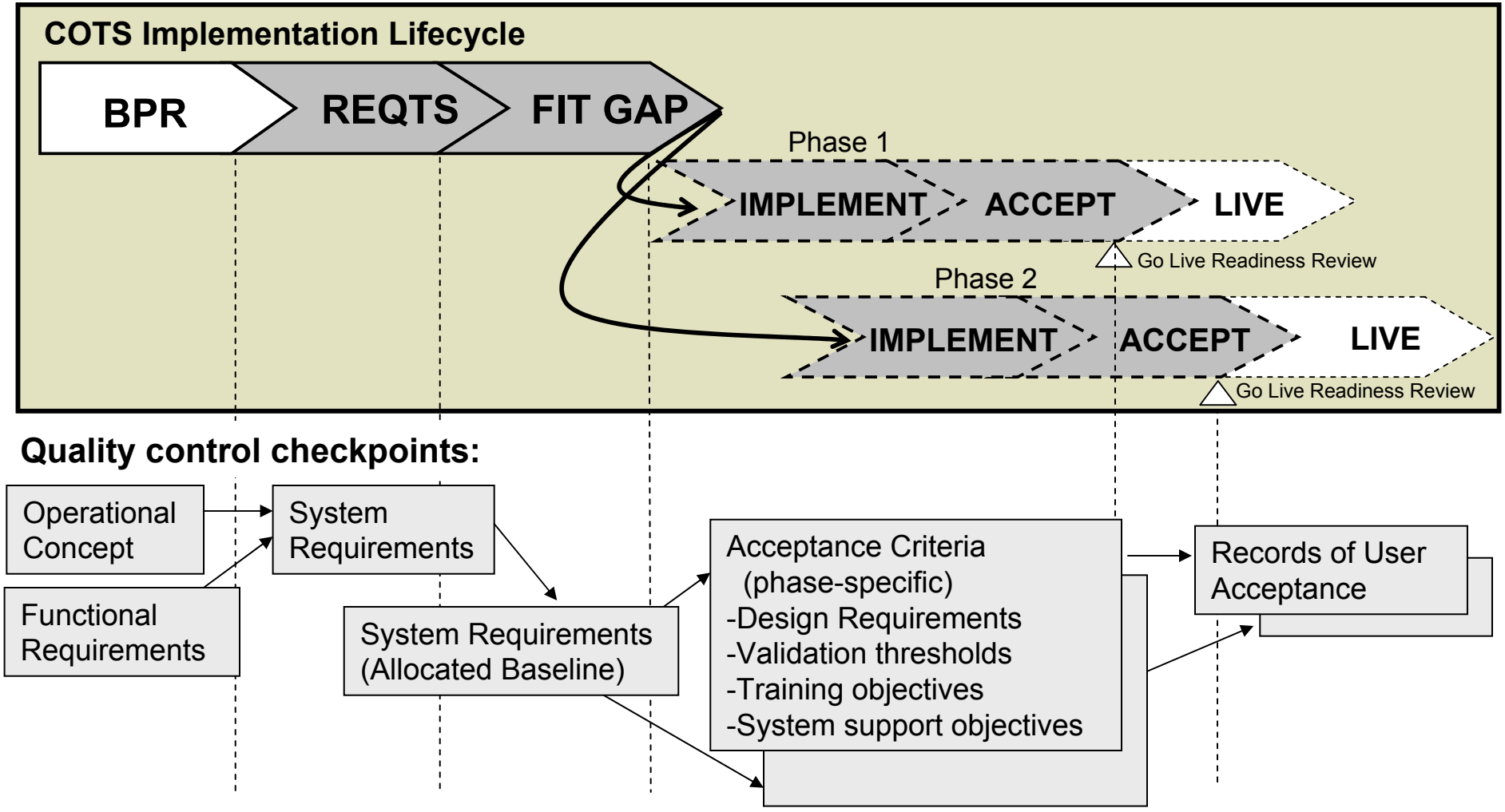
- Where are we?
- How are we doing? (Are we where we should be?)
- Will we get there on time and in budget?

Classical quality management delivers service against expectations only to a point for COTS implementations

- Implementing under ISO 9001 will yield a more effective solution
- Classical quality management sets up systematic organizational learning
  - Audits are based on interviews and inspections of historical data
  - Focus is on improvement – Better results “next time”
- Issue: COTS – especially ERP – solutions do not have a “next time”
  - Installed, configured, customized, validated, and DONE!
- Problem: “It’s hard to implement COTS using the rear view mirror”
  - COTS implementation projects need a forward looking approach within the QMS

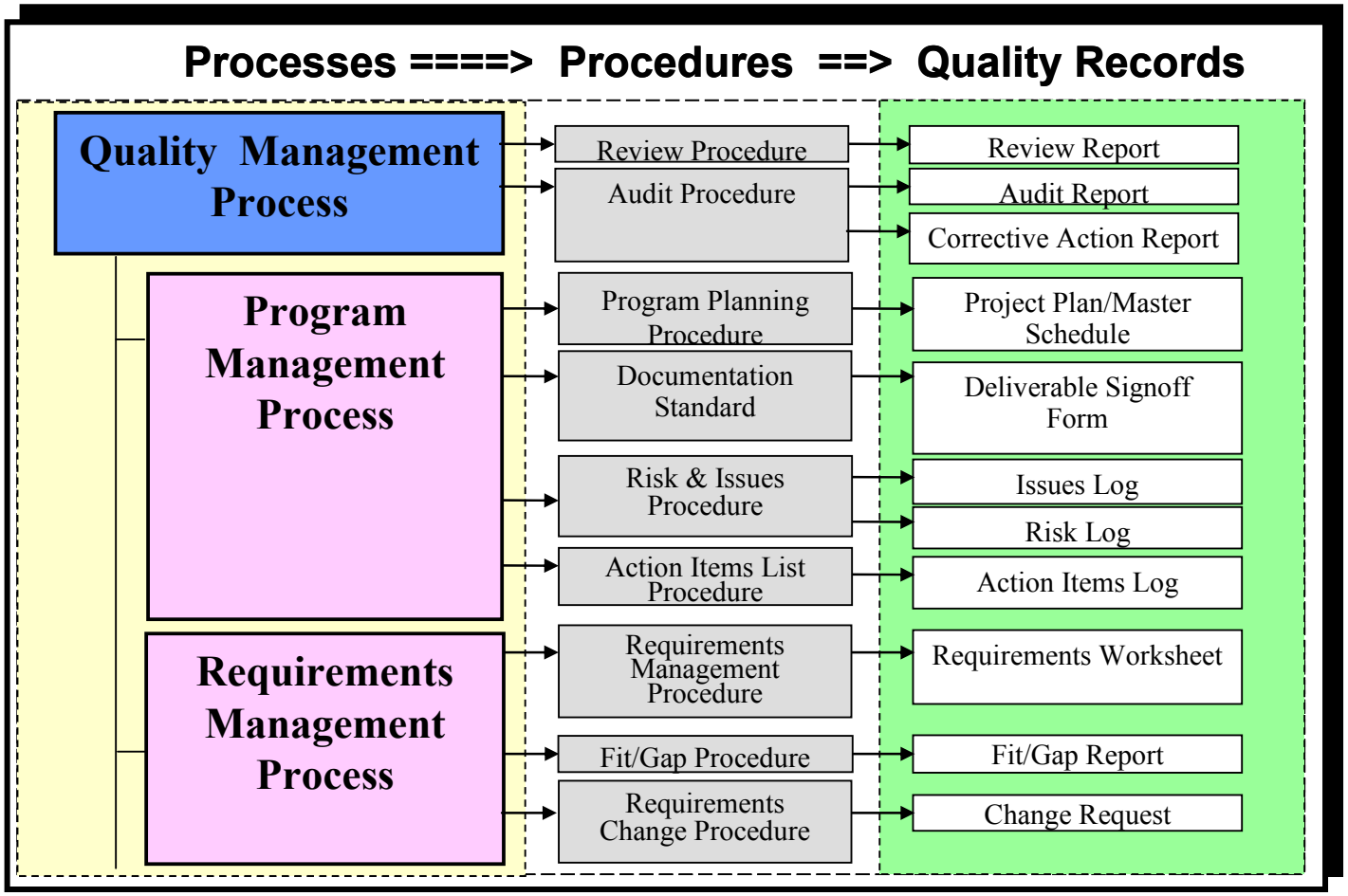
Risk management techniques can be used to preview performance of the ISO 9001 QMS

Quality control checkpoints in the COTS lifecycle give insight into "where we are" – not "will we get there"



A practical practice for ERP solutions is to imbed a risk management process within the QMS

Schematic representation of a QMS for ERP Implementation (Partial)*



*Caution – illustrative: Shows only a partial view of the QMS.

Risk management in ISO 9001 is "Preventive Action*." The quality management system must include actions to…

- Eliminate causes of potential nonconformities
- Prevent their occurrence
- Take actions appropriate to the effects of the potential problems
- Develop a written procedure to define requirements for
  - Determining potential nonconformities and their causes
  - Evaluating need for action to prevent occurrence
  - Determining and implementing action needed
  - Record actions taken
  - Review actions taken

*Reference para. 8.5.3, ISO 9001:2000

Under AS 4360:2004, risk management includes…

- Establish the context
- Identify risks
- Evaluate risks
- Treat risks
- Risk management plan

NOTE:
The design and implementation of the risk management system is influenced by the varying needs of an organization, its objectives, its products and services, and the specific practices employed.

Under CMMI,(SM) risk management includes…

- Determine risk sources and categories
- Define risk parameters
- Establish risk management strategy
- Identify and analyze risks
  - Identify risks
  - Evaluate, categorize and prioritize risks
- Mitigate risks
  - Develop risk mitigation plans
  - Implement risk mitigation plans

Reference: Capability Maturity Model® Integration (CMMI[SM]), Version 1.1.
CMM and Capability Maturity Model are registered in the U.S. Patent and Trademark Office.
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Risk management gives a prediction of future (expected) performance based on critical success factors

- All mainstream risk management methodologies have similar features
- Risk management can become a project unto itself
- Recommended approach: Use risk management practices and ISO 9001 criteria to define a scorecard approach with critical success factors

A risk assessment estimates the likelihood of project achievements based on the project's critical path

Example: Risk assessment for a PeopleSoft HR implementation

CRITICAL PATH ACTIVITIES	START BY	COMPLETE BY	OWNER	ACCEPT	RISK	
					12-Dec	19-Dec
Install PeopleSoft/Prepare Environments						
DVT	1-Nov	1-Dec	NR	LM		
TST1	1-Nov	26-Dec	NR	LM		
TST2	15-Nov	31-Dec	NR	LM		
QA1	1-Dec	15-Jan	JR	KS		
Complete Data Conversion	1-Nov	11-Dec	JM	RH, KS, JZ, WJ		
CRP #1 - Validate security profiles	3-Dec	20-Dec	RS	RH, KS, JZ, WJ		
CRP #2 - Setup Employee Profile	21-Dec	20-Jan	RS	KS, JZ, WJ		
CRP #3 - Interface validation						
CRP #3A - Interface to T&L	23-Dec	22-Jan	TB	JS,KS		
CRP #3B - Interface to Benefits	26-Dec	25-Jan	MG	TK, KS		
CRP #3C - Interface to Medical systems	26-Dec	4-Feb	KV	PL, KS		
CRP #4 - Employee Requisition	20-Dec	19-Jan	RS	KS, JZ, WJ		
CRP #5 - Benefits	20-Dec	29-Jan	MM	KS, TK		
CRP #6 - Compensation	10-Jan	19-Feb	JG	KS, JZ, WJ		
CRP #7 - End-to-End	24-Jan	1-Mar	MM	KS, JZ, WJ, TK, PL		
Pilot/Parallel Test	6-Mar	5-May	RS	KS, JZ, WJ, TK, PL		
Go Live	15-May	15-May	RS	KS, JZ, WJ, TK, PL		

Risk severity is determined by summarizing the expected state of the critical success factors….

Example: Risk assessment for a PeopleSoft HR implementation with critical success factors

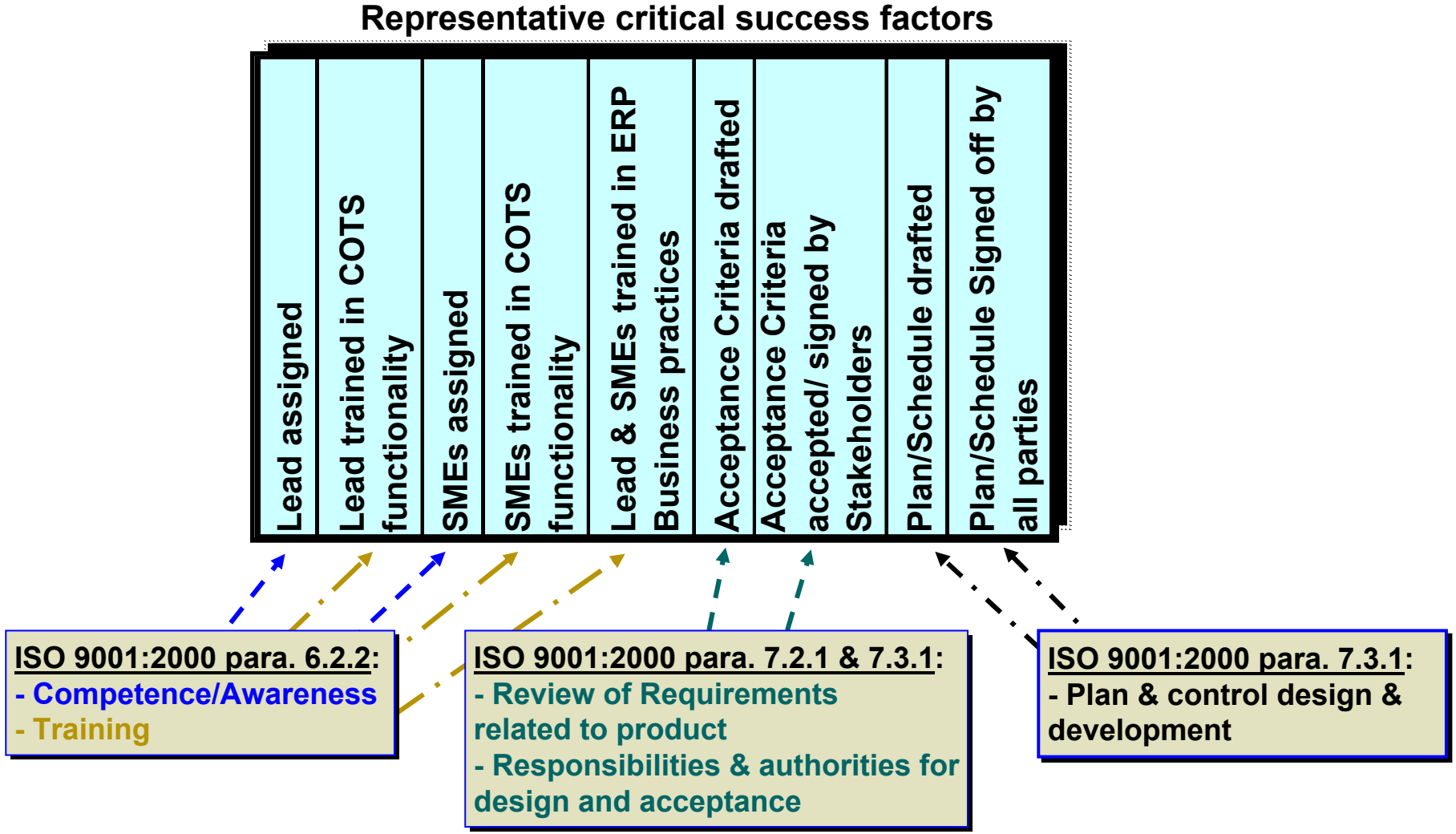
CRITICAL PATH ELEMENT	Risk Assessment - Week 1	Risk Assessment - Week 2	CRITICAL SUCCESS FACTORS								
Configure/customize COTS - Phase 1			Lead assigned	Lead trained in COTS functionality	SMEs assigned	SMEs trained in COTS functionality	Lead & SMEs trained in ERP Business practices	Acceptance Criteria drafted	Acceptance Criteria accepted/ signed by Stakeholders	Plan/Schedule drafted	Plan/Schedule Signed off by all parties
Activity #1											
Activity #2											
Activity #3											

ADDITIONAL FACTORS

Shows trends

CAUTION:
Representative success factors used here may not correspond to or be appropriate for your project

Critical success factors are ISO 9001 criteria, tailored to the COTS implementation and augmented by lessons learned



In summary, risk management methodology can be used to assess future performance of the ISO 9001 QMS

- Use ISO 9001 criteria to identify risk areas
- Supplement with detail and priority based on COTS implementation lifecycle and lessons learned
- Use a scorecard representation to streamline communication
- Updated on a regular basis by the QA staff
- Posted in generally accessible location (e.g., company intranet)