

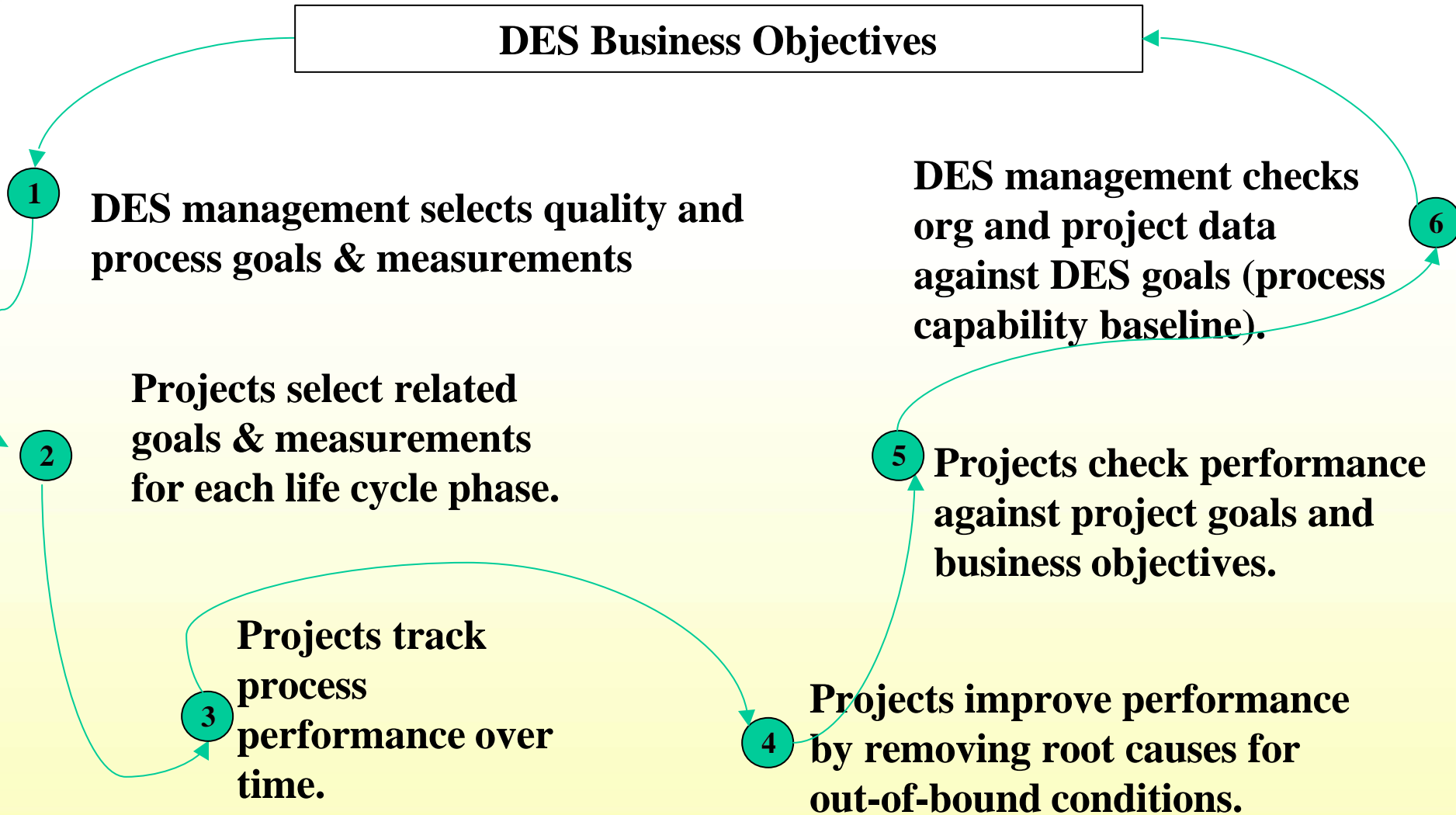
CMMIsm Technology Conference and User Group November 2002

Business Value and Customer Benefits Derived from High Maturity

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- **Purpose:**
 - Communicate business value and customer benefits derived from an application of “high maturity” system/software engineering processes, and
 - How an integrated process framework helps
- **Discussion Agenda**
 - Business Value/Customer Benefits & Process Highlights
 - Quality and Process Goals
 - Quality and Process Performance
 - Process Highlights
 - Integrated Process Improvement (CMMI)
- **Limit – 40 minutes including questions**

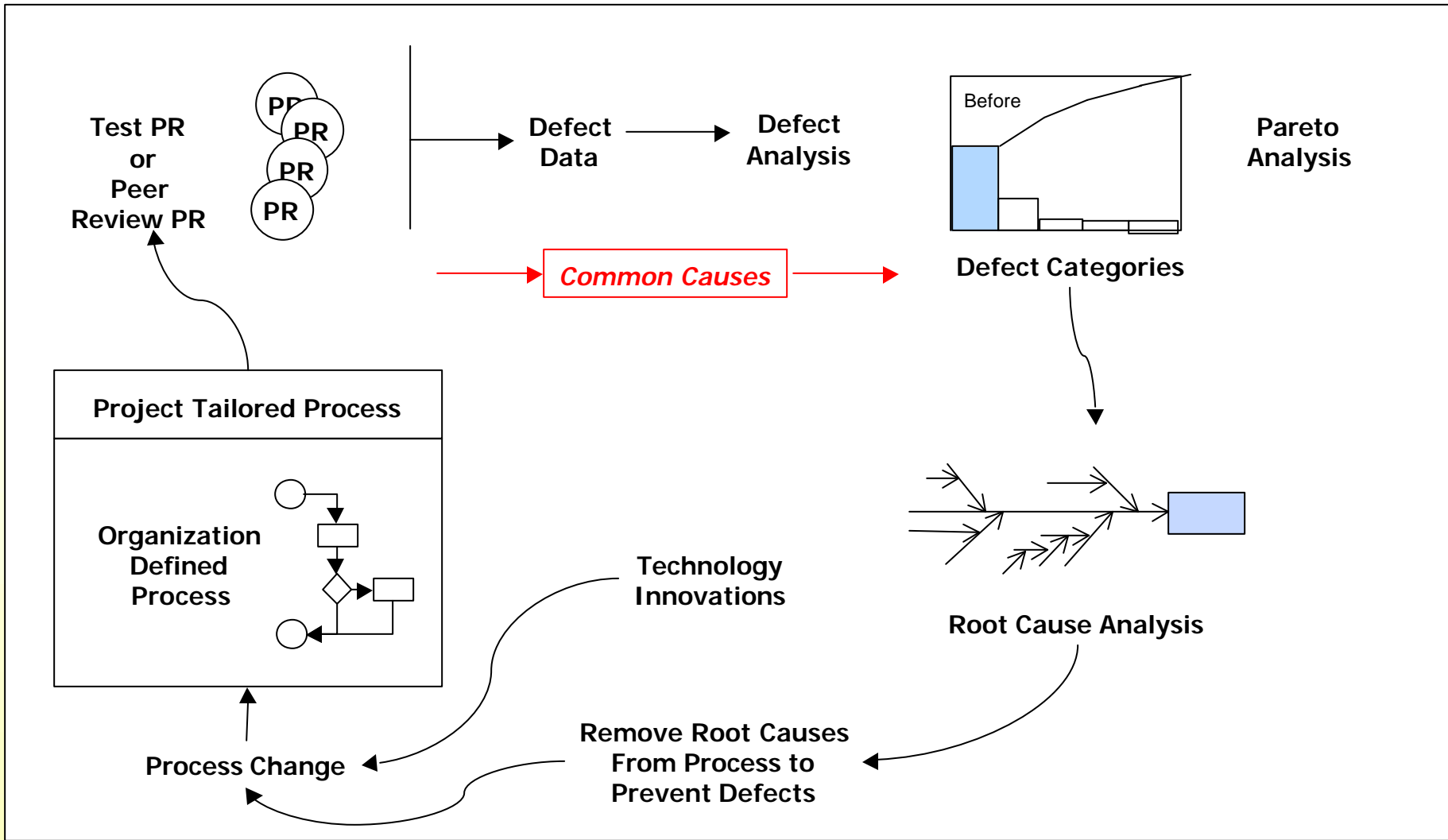


Acronym	Measurement	Process
CPI _m	Cost Performance Index monthly	Earned Value System
SPI _m	Schedule Performance Index monthly	Earned Value System
EPV _{Pm}	ETC Performance Variance Percentage monthly	Earned Value System or other financial process
DD _r	Defect Density from Peer Review	Peer Review (all Life Cycle Stages)
DD _t	Defect Density from Test & Operations	Test

Process/Quality Improvements support Organizational Business Objectives

DES Business Objectives	DES Process & Quality Performance Goals
Annual Operating Plan	Collective across participating projects
Achieve revenue and margin objectives	<ol style="list-style-type: none"> 1. Achieve Cost Perf. Index = $1 \pm 5\%$ 2. Achieve Schedule Perf. Index = $1 \pm 5\%$ 3. Achieve Est-To-Complete-Var = $0 \pm 5\%$. 4. Achieve 5% improvement in Defect Density for each life cycle phase.
Improve customer satisfaction rating	<ol style="list-style-type: none"> 1. Achieve Cost Perf. Index = $1 \pm 5\%$. 2. Achieve Schedule Perf. Index = $1 \pm 5\%$. 3. Achieve Est-To-Complete-Var = $0 \pm 5\%$. 4. Achieve 5% improvement in Defect Density for each life cycle phase.

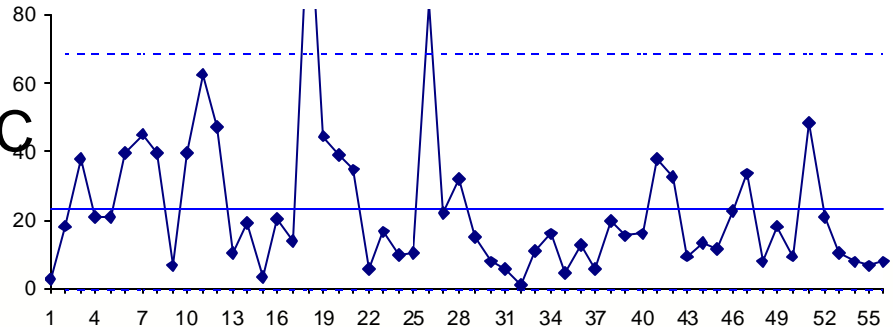
Optimizing Process Strategy Overview



S Technical

- Goal: 20 +/- 5 defects/KLoC
- Actual: 22.9 defects/KLoC
- Action: Implementing DDT
- Technical Highlights: Only 2% of all defects are found in the fielded system

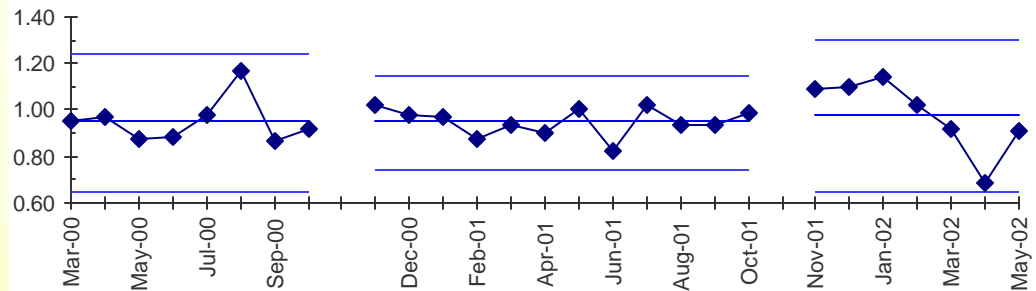
Defect Density at Review (all defects)



S Financial

- Goal: 1.0 +/- 0.1
- Actual: 0.98
- Action: DP cycle for SCoV in April; Countermeasures – improve estimation; change EV tracking
- Technical Highlights: CPI is still on target

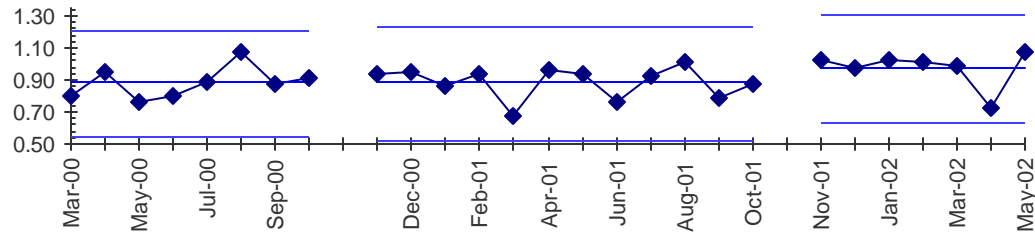
Cost Performance Index (Monthly)



M Schedule

- Goal: 1.0 +/- 0.1
- Actual: 0.975
- Action: Watching closely, DP cycle for SCoV in April; Countermeasures – improve estimation; change EV tracking
- Technical Highlights: will be Satisfactory by 7/02

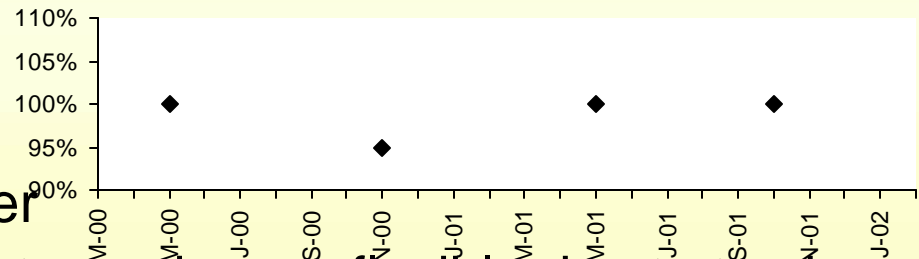
Schedule Performance Index (Monthly)



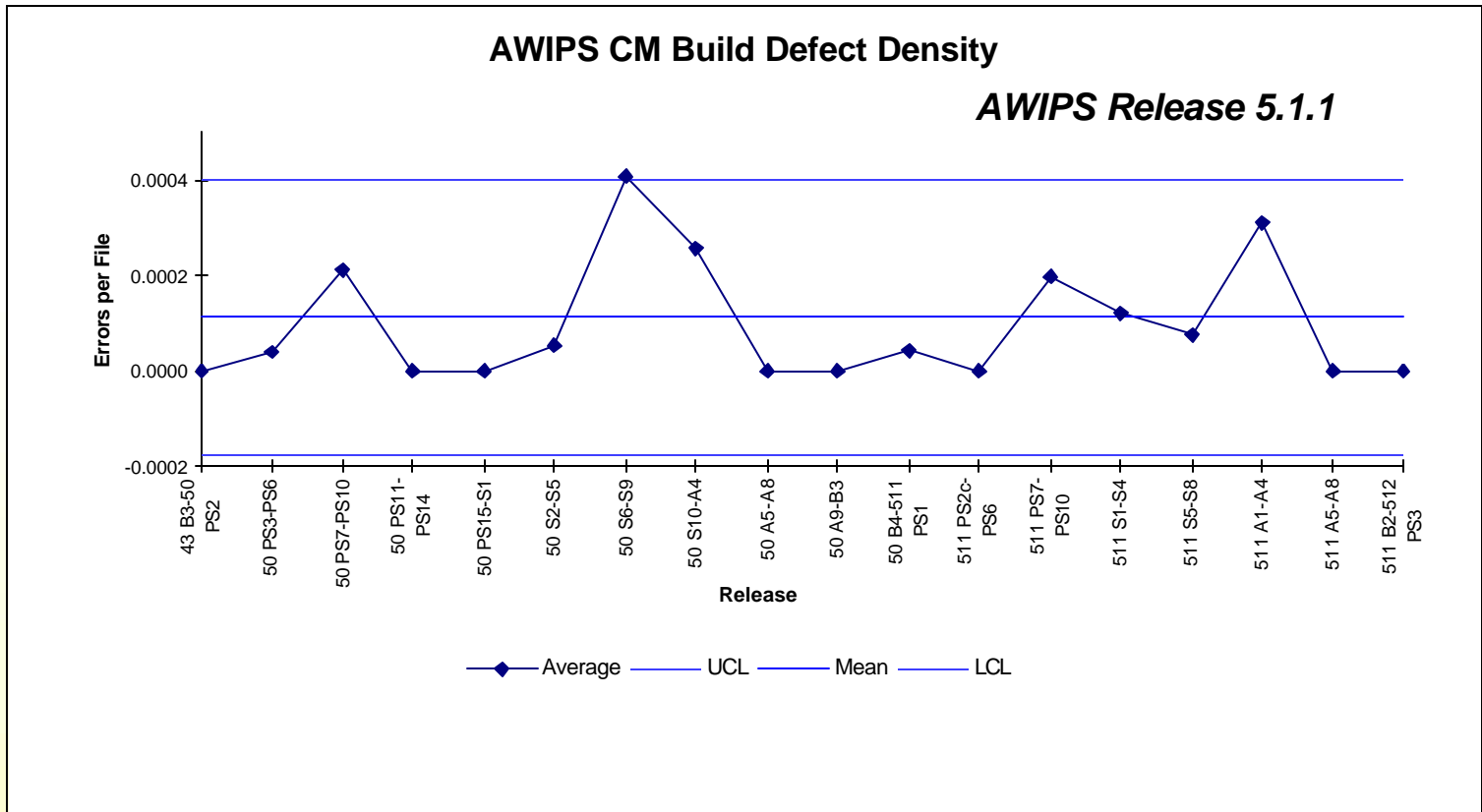
E Customer Satisfaction

- Goal: >= 95%
- Actual: 98.8%
- Action: Continue to deliver
- Technical Highlights: Customer is very flexible due to track record

Award Fee Scores

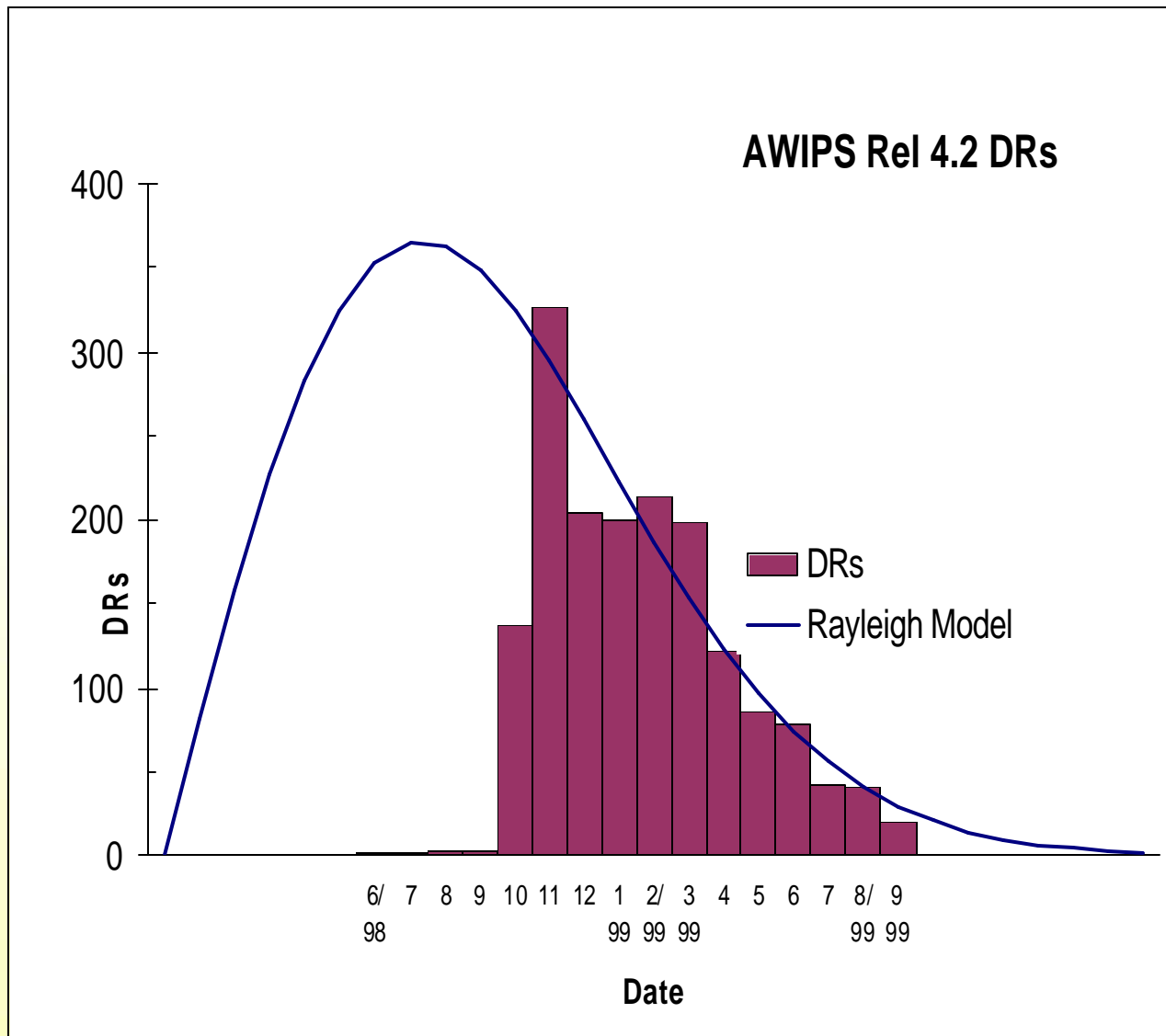


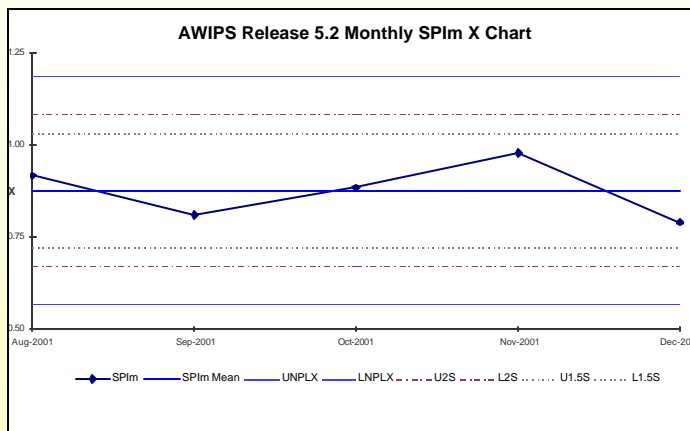
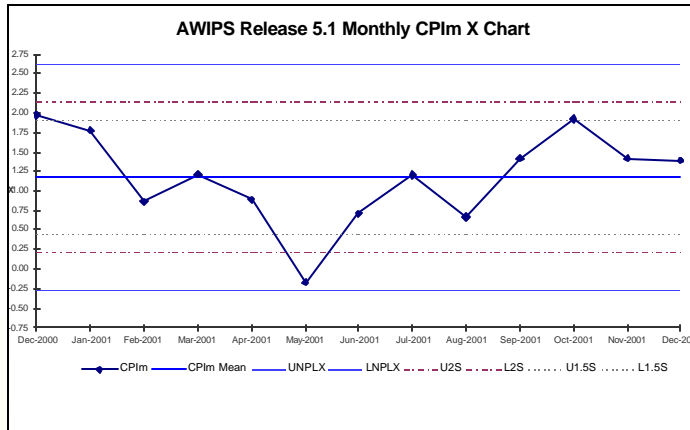
Controlling Quality Performance — Build



Statistical process control identifies build issues that can impact the development schedule.

Predicting Quality - Example

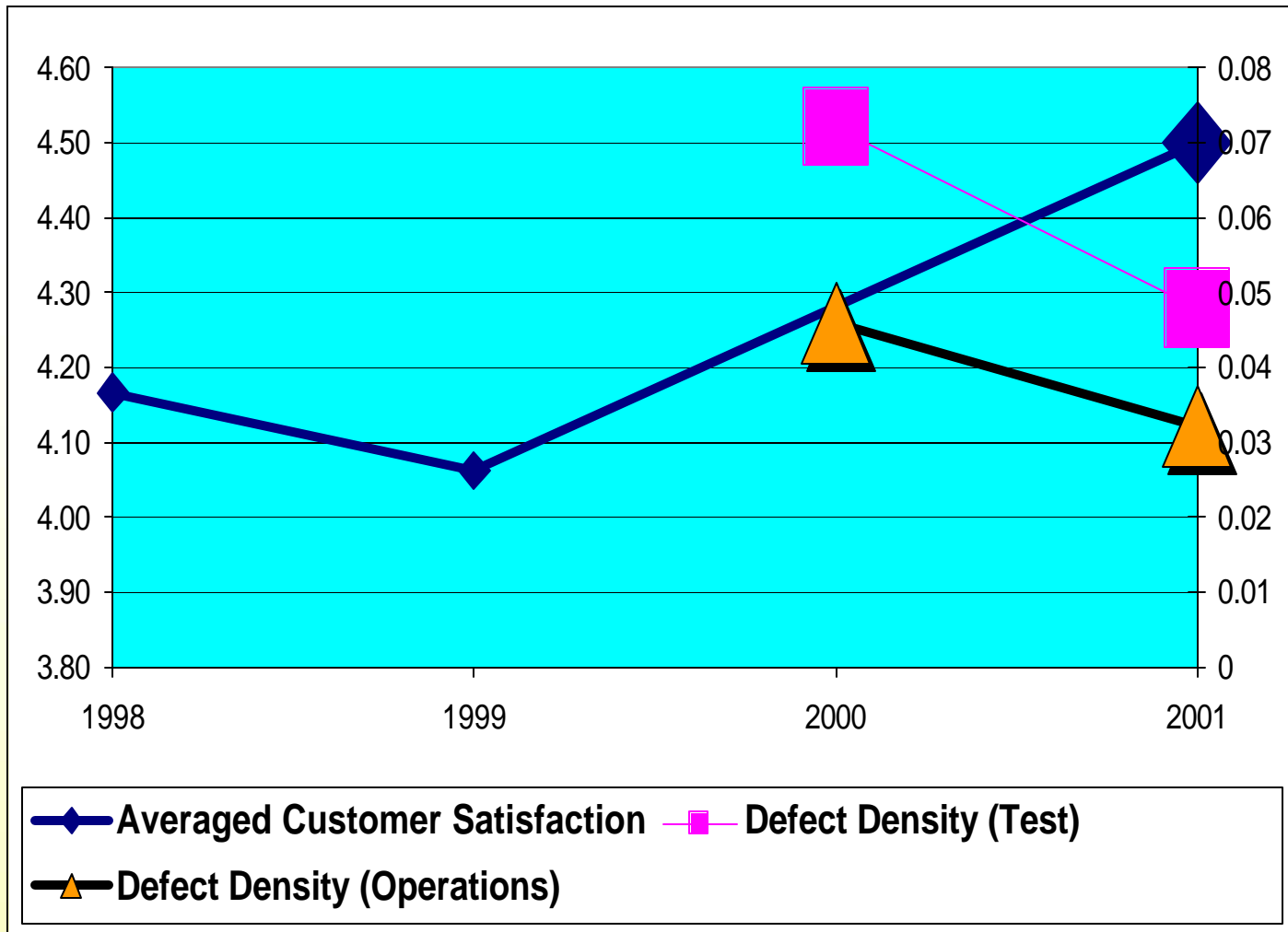


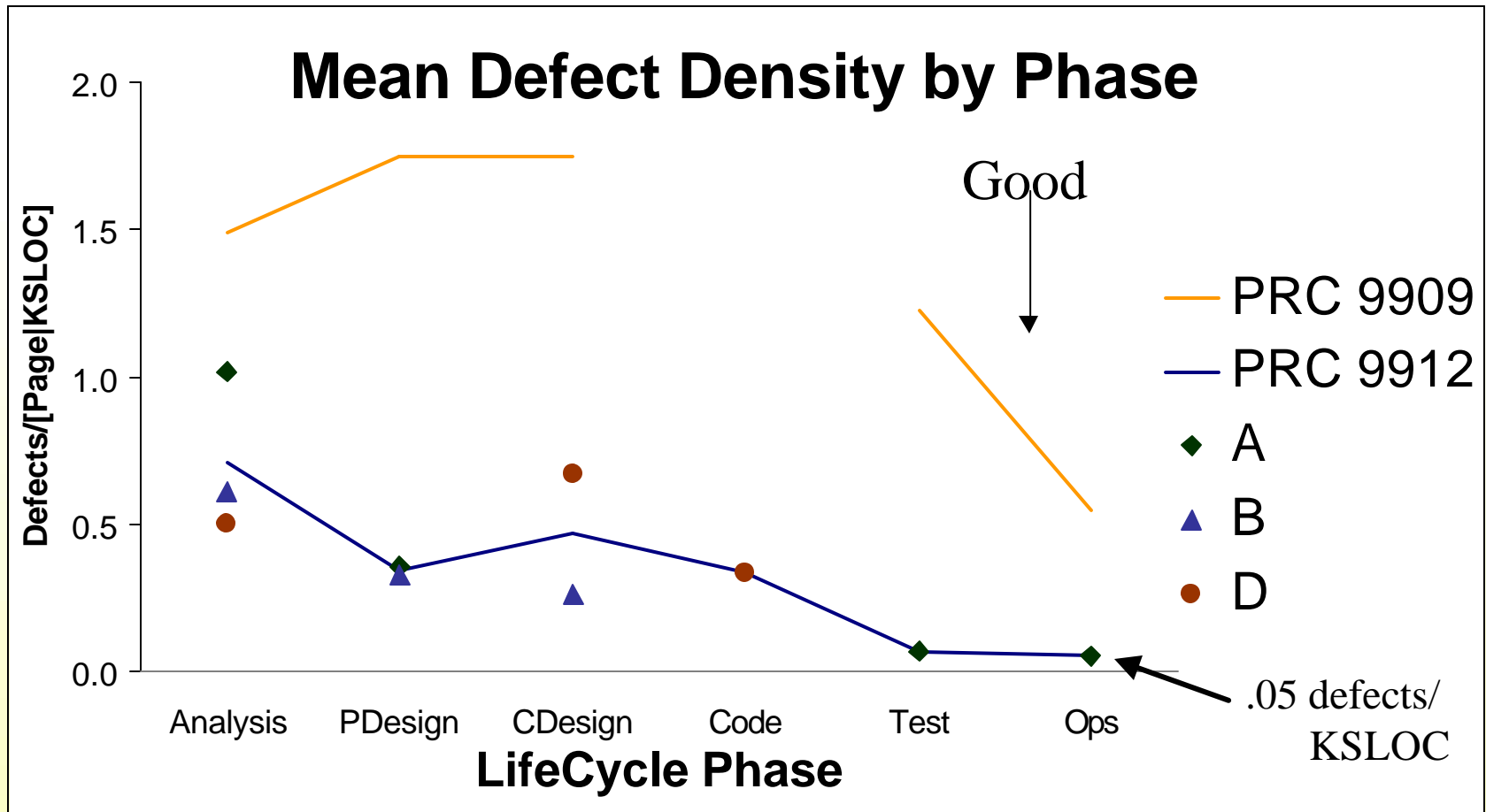


- **Cost and schedule can be managed with statistical process control**
- **Improves predictions of future performance**
- **Results:**
 - Build 4, 2% underrun
 - R5.0, 4% underrun
 - R5.1, 5% underrun
 - Build 5 variance in last 12 months, 10%

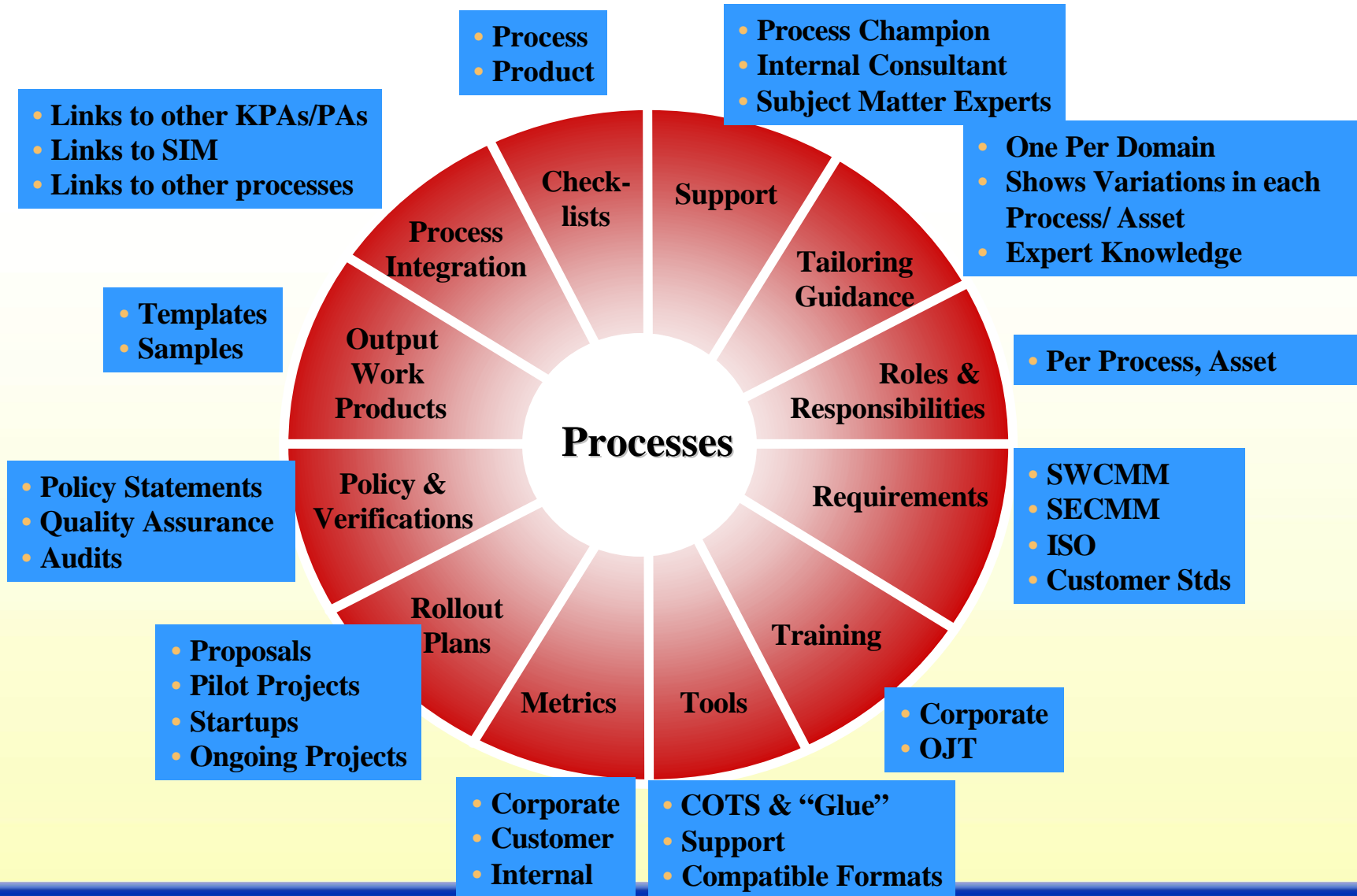
Statistical process control improves cost & schedule performance.

JEDMICS Defect Density & Customer Satisfaction Survey





Process Implementation Support – Best Practice



Information Technology Products & Services in Constant Change

IT Consulting

Sys Arch, Engin & Delivery

Enterprise Integration

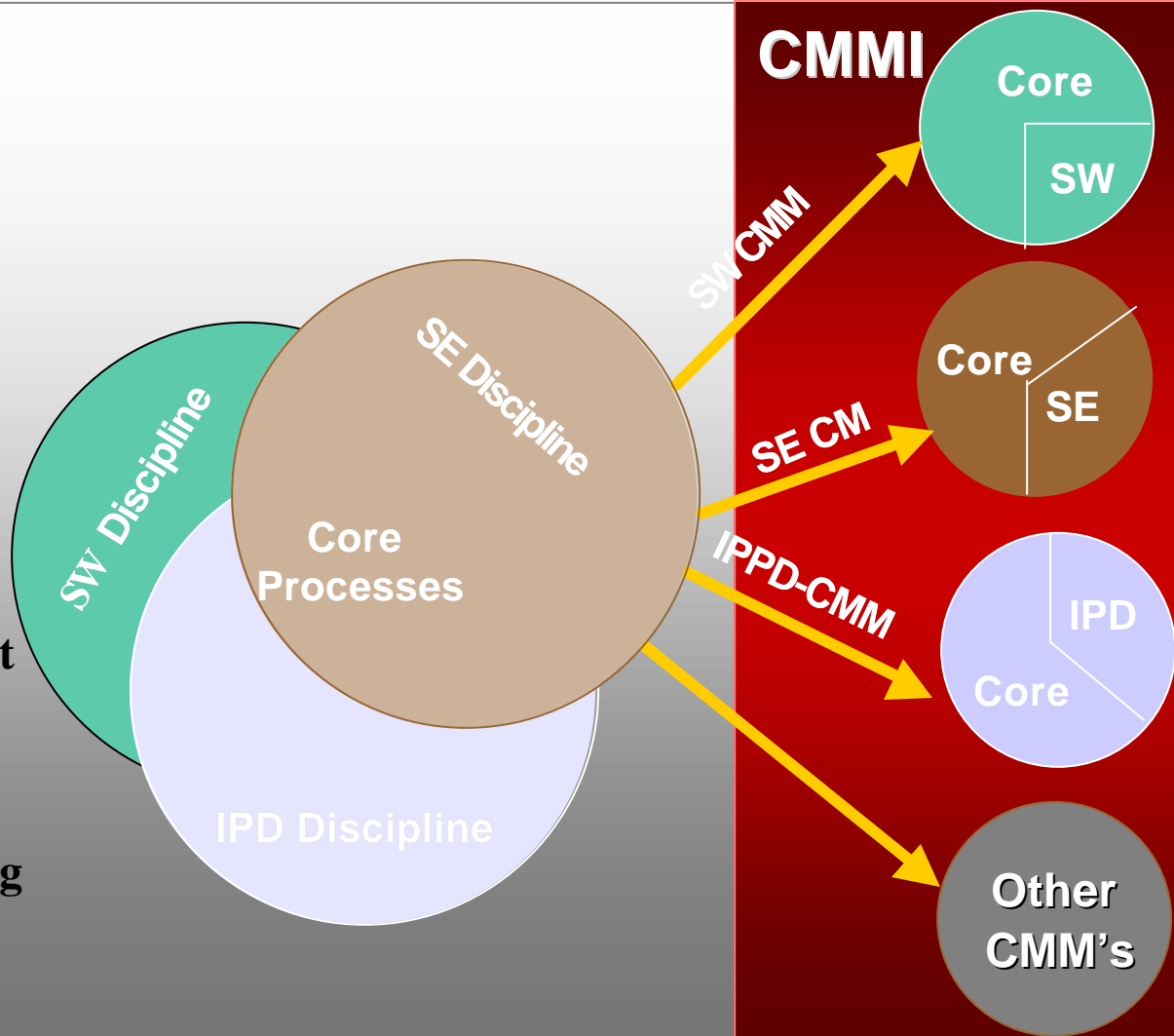
Data Center Operation

IT Infrastructure Management

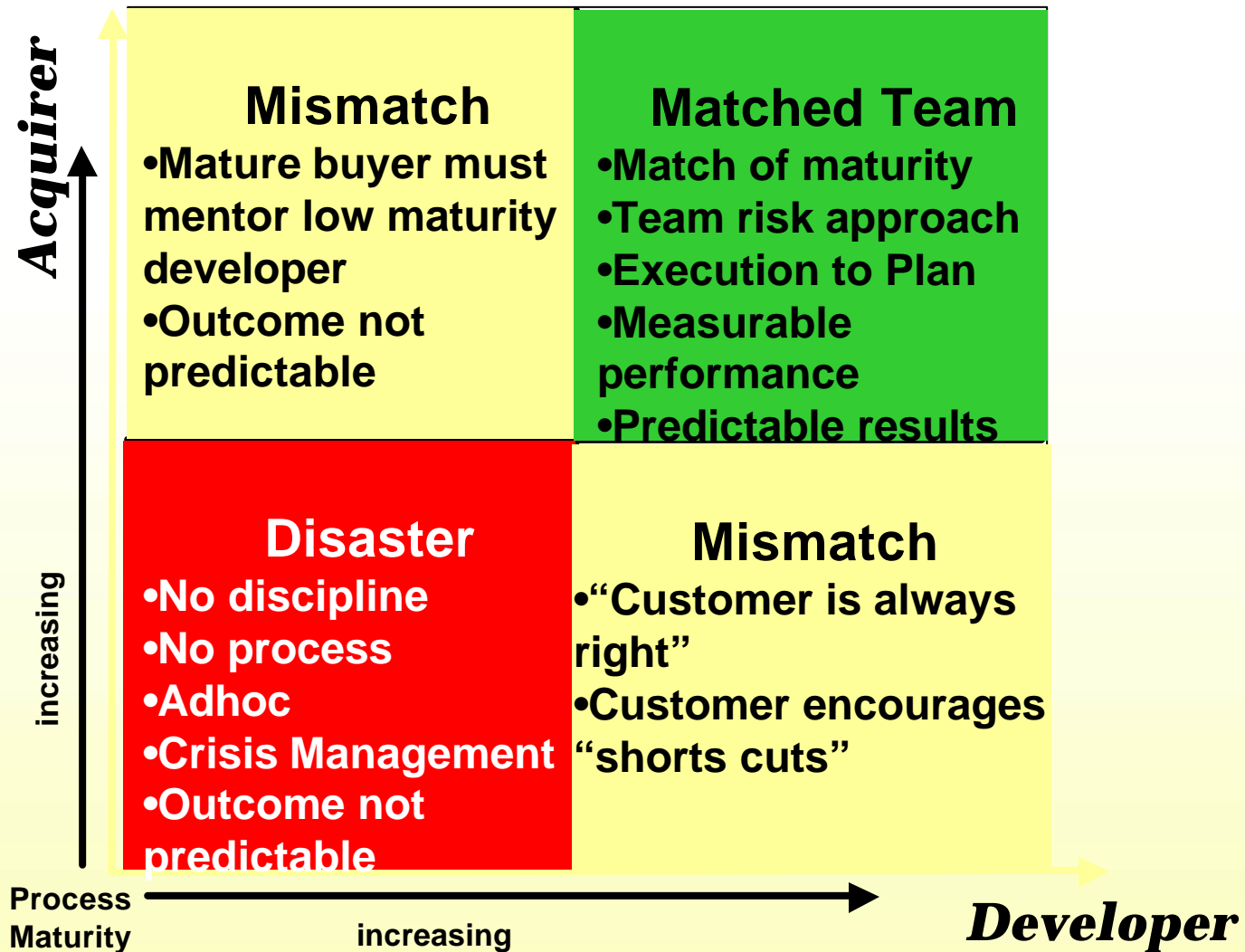
Applications Management

SETA

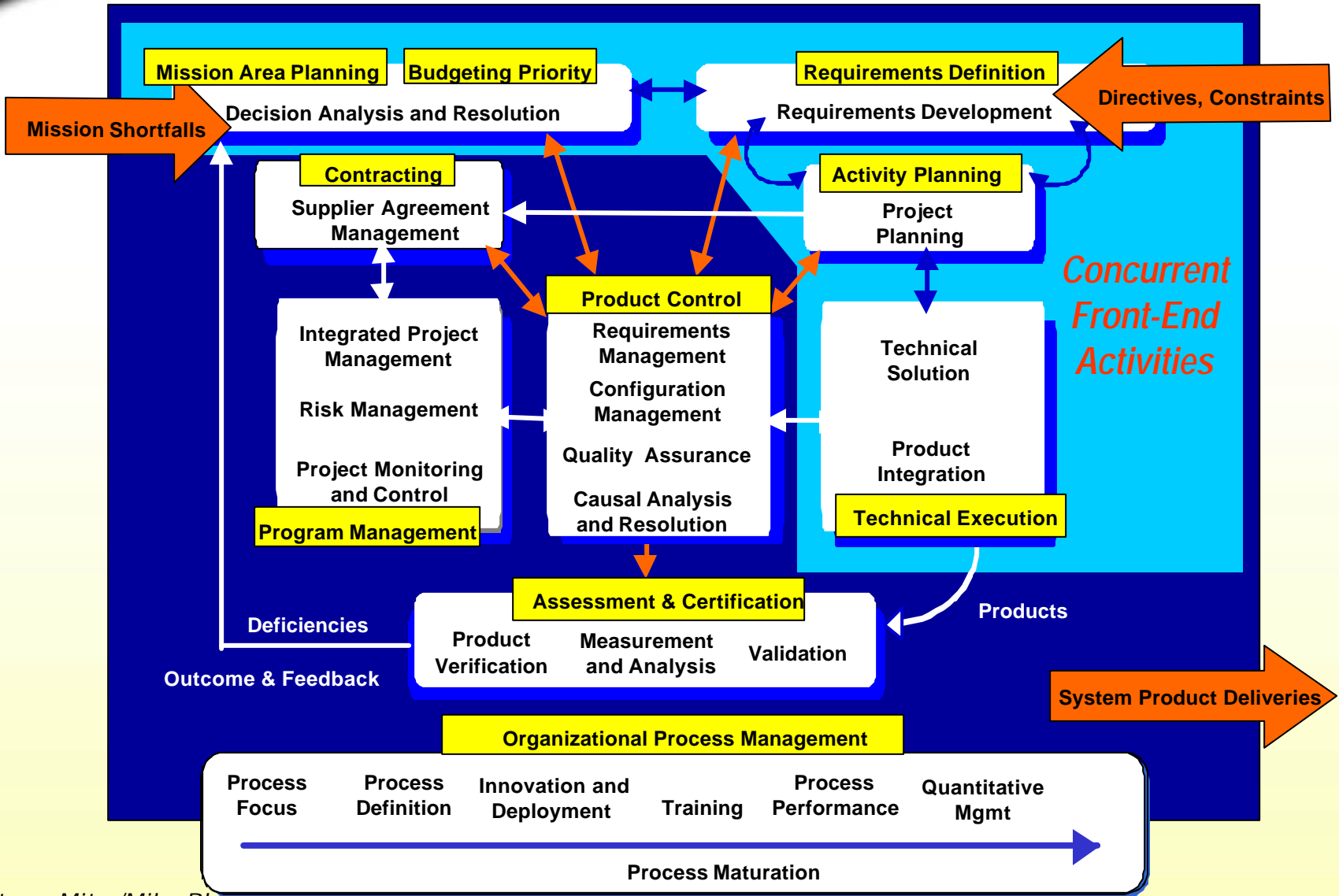
Functional Process Outsourcing



Context: Acquisition/Development Space



Why the CMMI fit's



Courtesy: Mitre/Mike Bloom