Please use Slides #2-7 for your introductions and slides #8-13 for your outbrief on Friday, 18 July

Practical Software and Systems Measurement

A foundation for objective project management

Measuring in Services Mgt
Tuesday, July 15th

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PSM Users Group Conference
14-18 July 2008
Mystic, Connecticut

Measuring in Services Management

- Service Management
  - Focus on ongoing IT service operations - day-to-day activities (vs. projects)
  - Involves the operation of hardware, software, applications, data, and networks needed to run the business
- Industry models: ITIL, ISO/IEC 20000, eSCM-SP, COBIT, eTOM, and SMBOK
  - Process Areas we'll focus on – Event, Incident, Problem, Release, Change Mgt; Request Fulfillment, Service Desk, Capacity Management
- Measurement is key to effective management

Objectives of the Workshop

- Begin to examine the proper use of measurement in service management/service operations
- Develop a preliminary list of common information needs and potential measures that are useful in this domain
- Provide lessons learned, barriers, data quality issues, best practices, how to establish baselines, etc.
- Provide examples of good practice

Workshop Agenda

1:30 – 2:00	Introductions – Participant Analysis -Your role in Ops, models your shop uses, maturity of shop
2:00 – 2:30	Review of ITIL process areas of focus -Mapping to org structures, technology
2:30 – 3:00	Common issues & information needs in ops shops -brainstorming & discussion
3:30 – 4:00	Available examples of measures to meet needs -Show-and-tell; best practices
4:00 – 5:00	Drafting of ICM entries/measurement specs -break outs

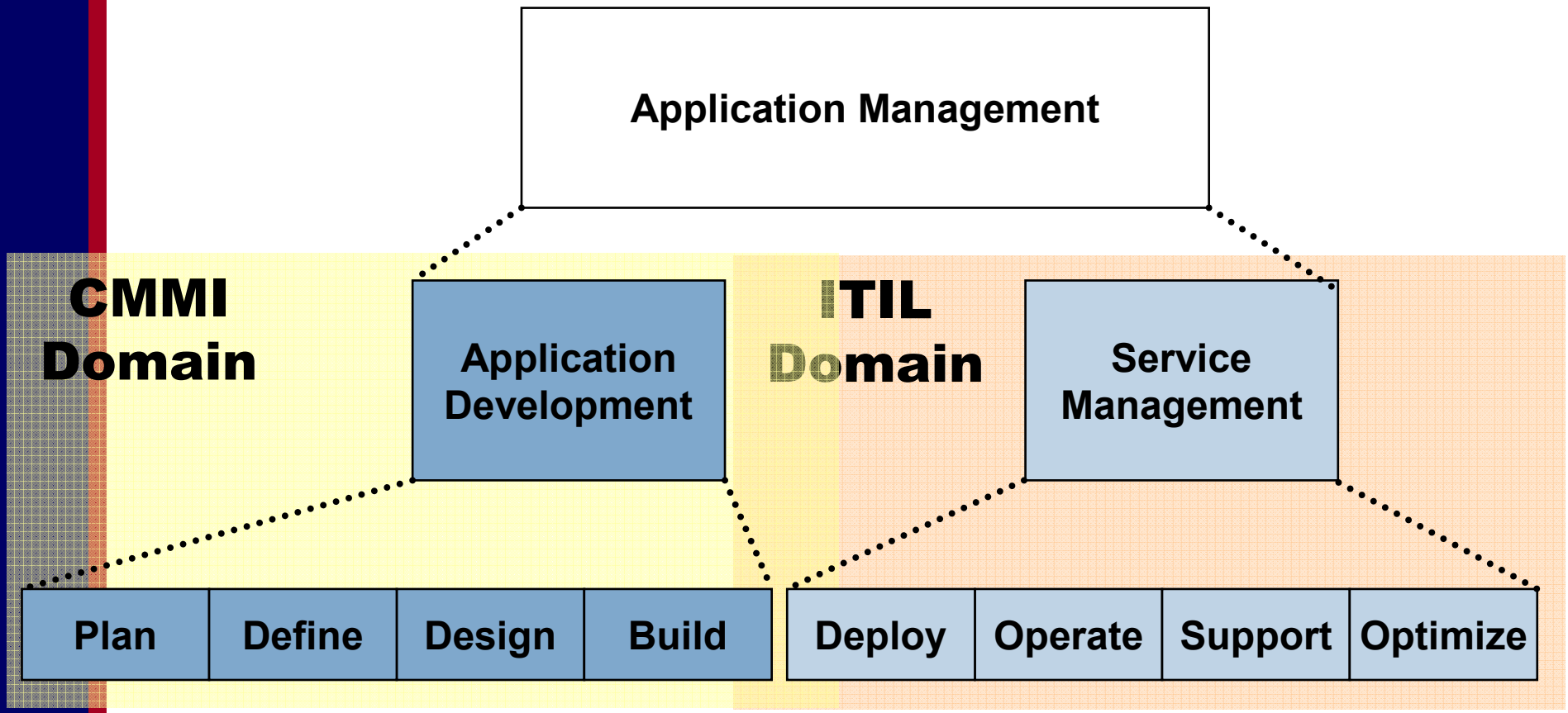
Workshop Background

- PSM history in this area
- Where we're heading
- Issues, questions, and topics

Intended Output

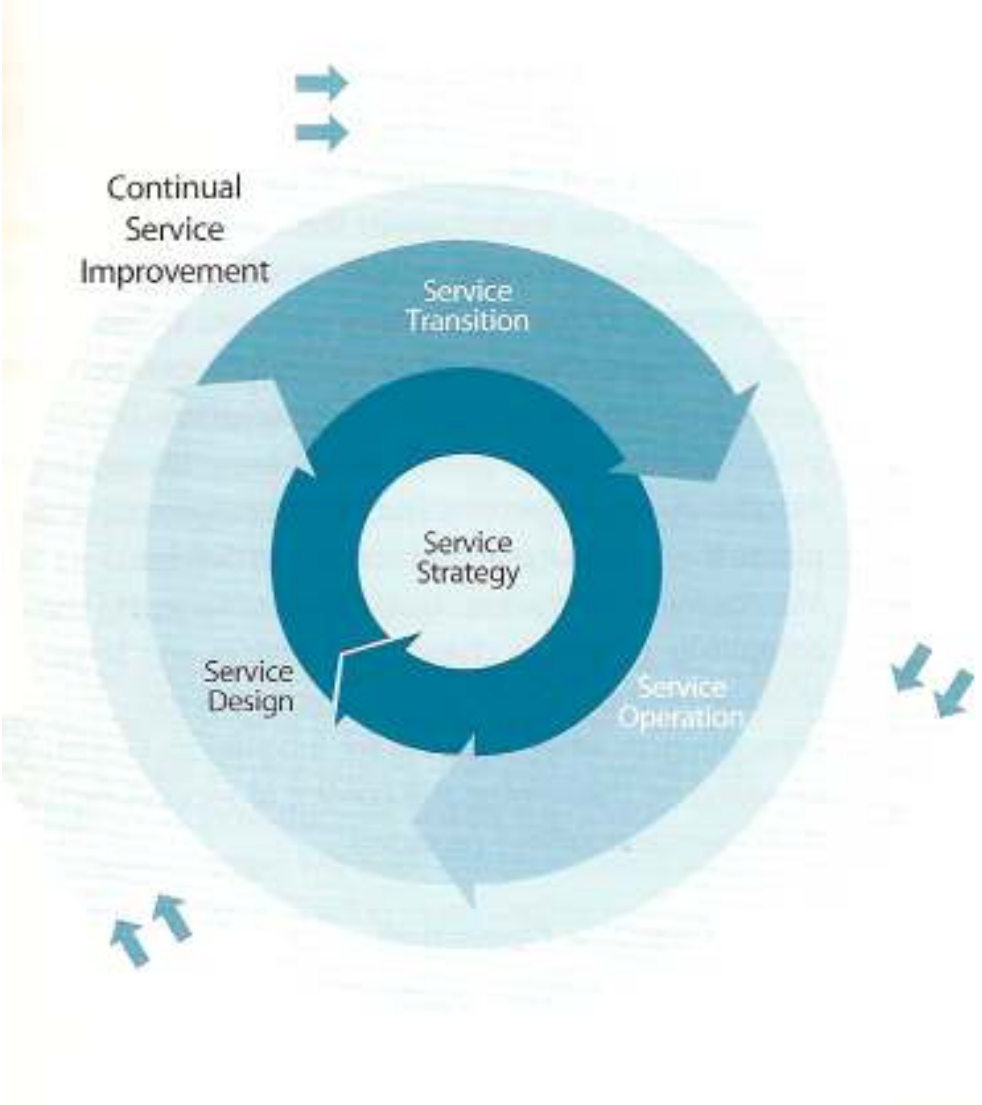
- Drafted ICM table
- Recommendations/plans for continued evolution

Service Management in Context



Source: ITIL: Application Management (2002, p.7)

IT Infrastructure Library (ITIL)



Initial PSM-ITIL Areas of focus

Units of Work

- Change Management (Transition)
- Incident & Problem Management (Ops)
- Request Fulfillment (Ops)
- Event Management (Ops)

Capacity Management (Design)

- Personnel
- Hardware, SW, Network, etc.

Looking at these areas as a starting point will help with SLM

Change Management

- Change Request (RFC): A formal proposal for a change to be made.
  - Examples: Push application release into production, fix a production problem
    - An implementation of new functionality
    - Any repair to an interruption of service
    - Any repair of existing functionality
    - Any removal of existing functionality
  - Change Advisory Board (CAB)
  - Issues: Unauthorized changes, unsuccessful changes, emergency changes
  - Considerations: Risk of making the change, Relationship to other activities, Return expected if change is made

Incident/Problem Management

- Incident: Any unplanned interruption to an IT service or reduction in the quality of the service
- Problem: The CAUSE of one or more incidents
  - Reporting Sources
  - Categories
  - Urgency, Prioritization, Impact
    - SLA – timescales
  - Incident: Problem relationship
  - Status
  - Resolution (and Satisfaction with)

Request Fulfillment

- Request: Demands placed on IT by the users (Help Desk/Service Desk)
  - Give access to user, install SW, move a PC
  - These things can and should be planned (vs. incident)
    - When needed

Event Management

- Event: Any detectable occurrence that might cause a deviation to service
  - Categories:
    - Normal Events: Scheduled operation starts, completes; user logs into an application,
    - Exception Events: Smoke, fire, license violation, security (intrusion detection), application failure, poor server performance
- Significance Categorization
  - Informational, Warning, Exception
- Event Response

Capacity Management (HW/SW)

- Monitoring performance, utilization patterns, and throughput
- Levels, layers, and relationships are important
  - Business: Number of orders processed
  - Service: Transaction rates/response times
  - Component: Network link performance

Capacity Management (People)

- Workload –> Resource relationship
- Issues: Not enough personnel to meet SLA targets, given current/projected workloads

Insights Needed

- Monitor and Control Operations
  - (SLA) targets being met
- Stability of Operations
- Predicting Future Needs
  - e.g., Volumes = Workforce
- Improvements over time

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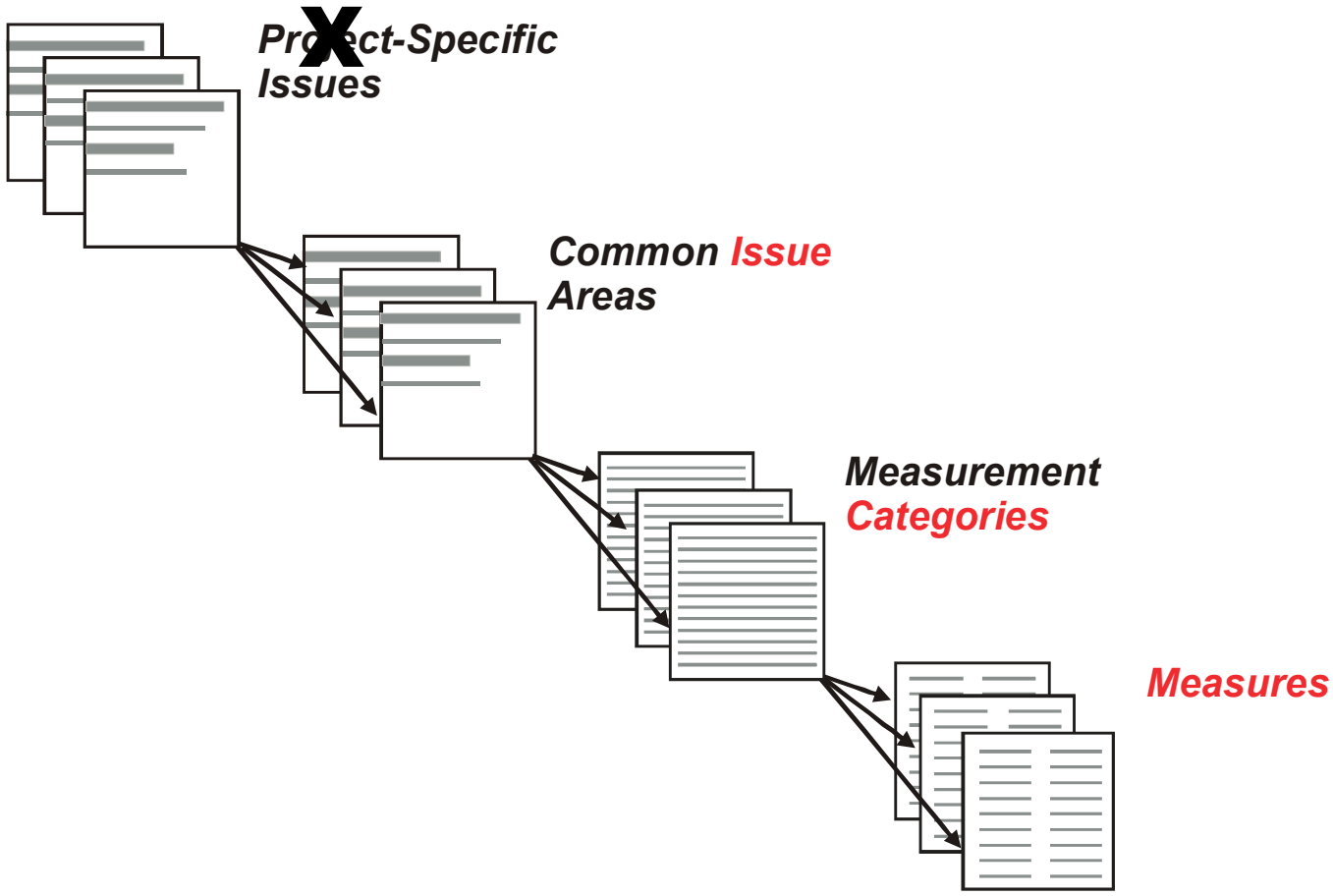
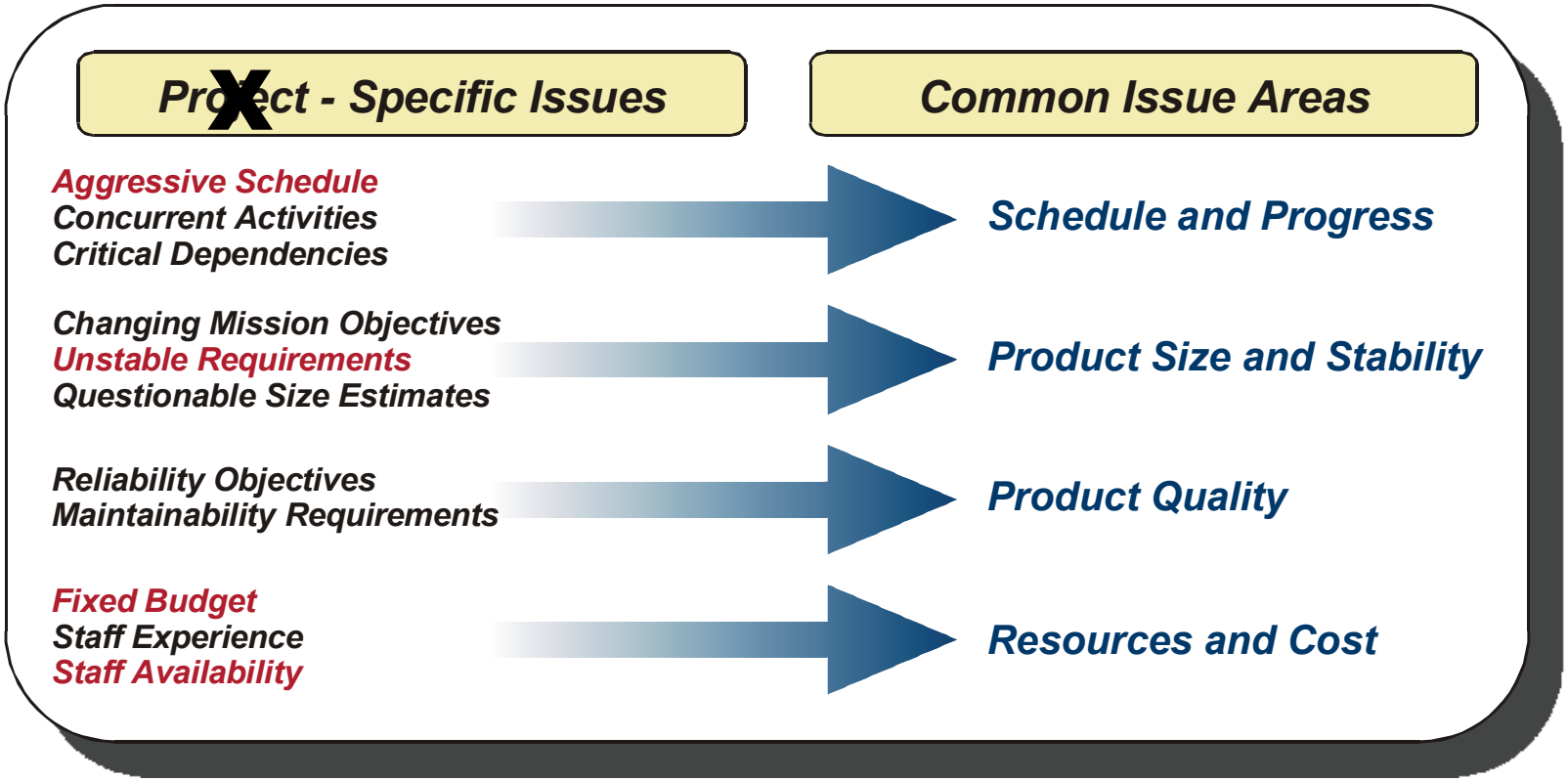
Thinking about an ICM Table



Issue Mapping



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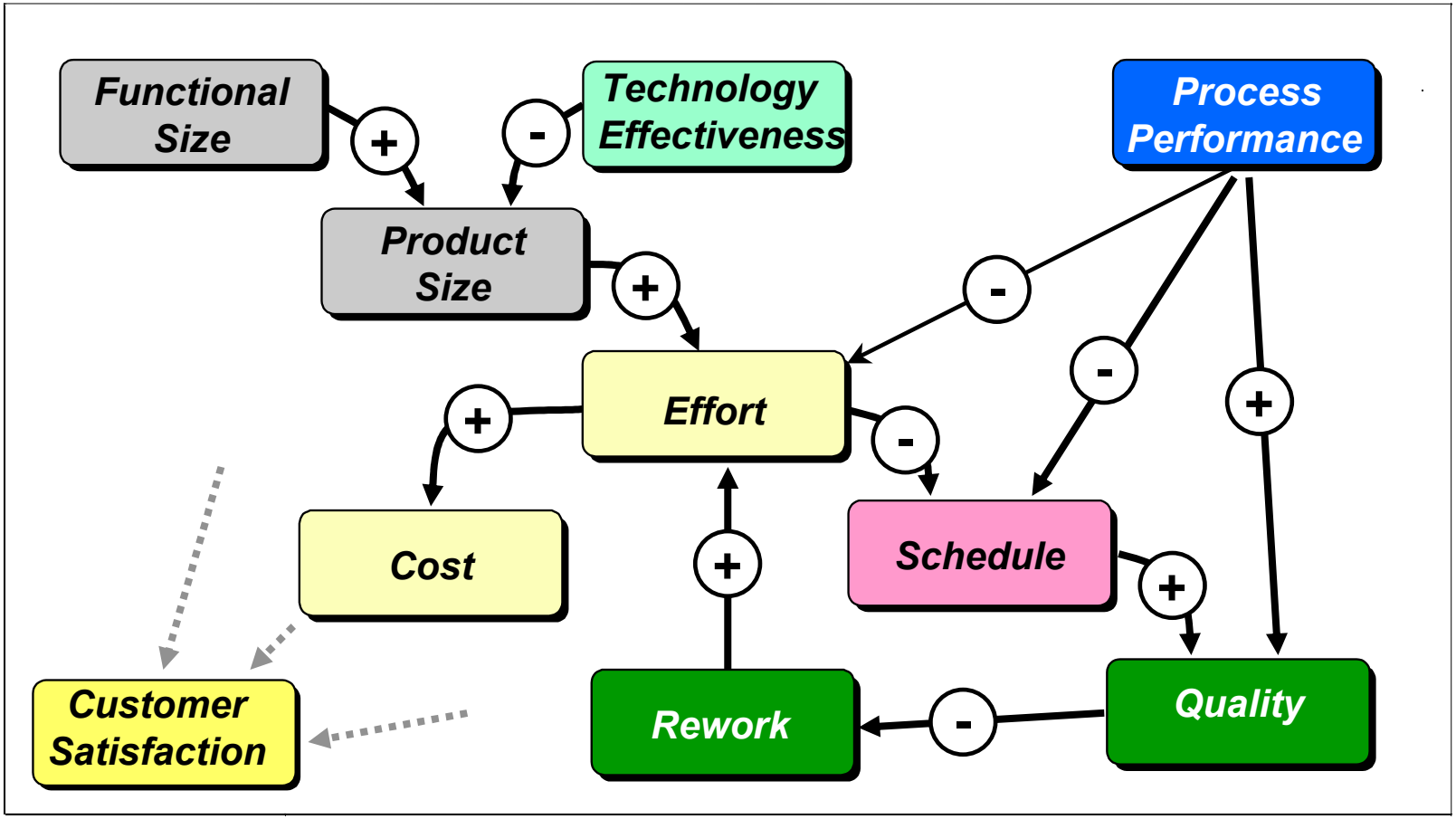
Existing PSM – Related Areas



PSM Mapping of Issues, Categories, and Measures

Issue - Category - Measure Mapping		
Common Issue Area	*Measurement Category*	*Measures*
Schedule and Progress	*Milestone Performance*	*Milestone Dates*
	Work Unit Progress	*Critical Path Performance* *Requirements Status* *Problem Report Status* *Review Status* *Change Request Status* *Component Status* *Test Status* *Action Item Status*
	Incremental Capability	*Increment Content - Component* *Increment Content - Functionality*
Resources and Cost	*Personnel*	*Effort* *Staff Experience* *Staff Turnover*
	Financial Performance	*Earned Value* *Cost*
	Environment and Support Resources	*Resource Availability* *Resource Utilization*
Product Size and Stability	*Physical Size and Stability*	*Database Size* *Components* *Interfaces* *Lines of Code* *Physical Dimensions*
	Functional Size and Stability	*Requirements* *Functional Change Workload* *Function Points*

PSM Mapping of Issues, Categories, and Measures (cont)

Issue - Category - Measure Mapping		
Common Issue Area	Measurement Category	Measures
Product Quality	Functional Correctness	Defects Technical Performance
	Supportability	Time to Restore Cyclomatic Complexity Maintenance Actions
	Efficiency	Utilization Throughput Timing
	Portability	Standards Compliance
	Usability	Operator Errors
	Dependability	Failures Fault Tolerance
Process Performance	Process Compliance	Reference Model Rating Process Audit Findings
	Process Efficiency	Productivity Cycle Time
	Process Effectiveness	Escapes Rework
Technology Effectiveness	Technology Suitability	Requirements Coverage
	Impact	Technology Impact
	Technology Volatility	Baseline Changes
Customer Satisfaction	Customer Feedback	Survey Results Performance Rating
	Customer Support	Requests for Support Support Time

Some examples-1

Urgency \ Impact	High	Medium	Low
High	**Priority: Severity 1** Response Time: 30 min. Target Resolution Time: 2 hrs.	**Priority: Severity 1** Response Time: 30 min. Target Resolution Time: 2 hrs.	**Priority: Severity 2** Response Time: 60 min. Target Resolution Time: 8 hrs.
Low	**Priority: Severity 1** Response Time: 30 min. Target Resolution Time: 2 hrs.	**Priority: Severity 2** Response Time: 60 min. Target Resolution Time: 8 hrs.	**Priority: Severity 3** Response Time: 24 hours Target Resolution Time: Best Effort

Urgency	Description	
	Ask the question:	Can The User Work?
High	• Critical Server Outage • Network Outage • Key Application Outage • Critical User	**No**
Medium	• Non-critical Server Outage • Non-essential Application Outage • Reduced performance of critical system or network.	**Yes, with some issues**
Low	• No Outage • Workaround Available • Support Services (installs, office moves, etc.)	**Yes, with no issues or a known error**

Impact	Description
High	• > 5 incidents on same issue • > 5 people affected • Critical User
Low	• < 5 incidents on same issue • < 5 people affected

Some examples-2

Change Acceptance Rate

- Number of RFCs submitted/rejected
  - High > 99%
  - Accept ≥ 95% ≤ 99%
  - Low < 95%

Incidents attributed to Changes

- Number of Incidents/problems resulting from an implemented RFC

Service Desk is Single Point Of Contact for Customer Incidents (Total Volume)

  - High > 95%
  - Accept > 70% ≤ 95%
  - Low ≤ 70%

Percentage Resolved – 1st Call

Percentage Incidents Escalated

Restore Normal Service 1st Call Avg. Time (Aging)

Number of System Outages Due to Out of Space Condition

All systems maintain at least 10% free capacity at all times

Practical Software and Systems Measurement

Workshop Title

Workshop Participants

Summary

Conclusions, Recommendations, and Results

Next Steps/Action Items