



High Maturity: Slow and Steady Wins the Race!

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Agenda

- Common Misconceptions of High Maturity
- What we have found to work
 - One Size does NOT Fit All!
 - Right Problems, Right Time, Right Skills, Right Data
 - Slow and Steady Wins the Race!
- Process Performance Model Examples
- Review



Common Misconceptions of High Maturity

- High Maturity is about drastically changing how an organization is operating
- Moving to High Maturity costs too much or takes too much time
- Dramatic change related to High Maturity is better than incremental change
- All projects in an organization must be focused on the same goal using the same baselines and models
- Processes and subprocesses can remain stable while business and product lifecycle phases change
- Current skill sets are adequate to move to High Maturity



What we have found to work

- One size does not fit all!
 - Focus of Quantitative Management needs to change with the business and product lifecycle phase
- Right Problems, Right Time, Right Skills, Right Data
- Successful High Maturity organizations move there in small steps and in a natural progression of wanting to know more
 - If it occurs naturally it becomes truly valuable to the organization
 - Slow and Steady Wins the Race!



One Size Does NOT Fit All!

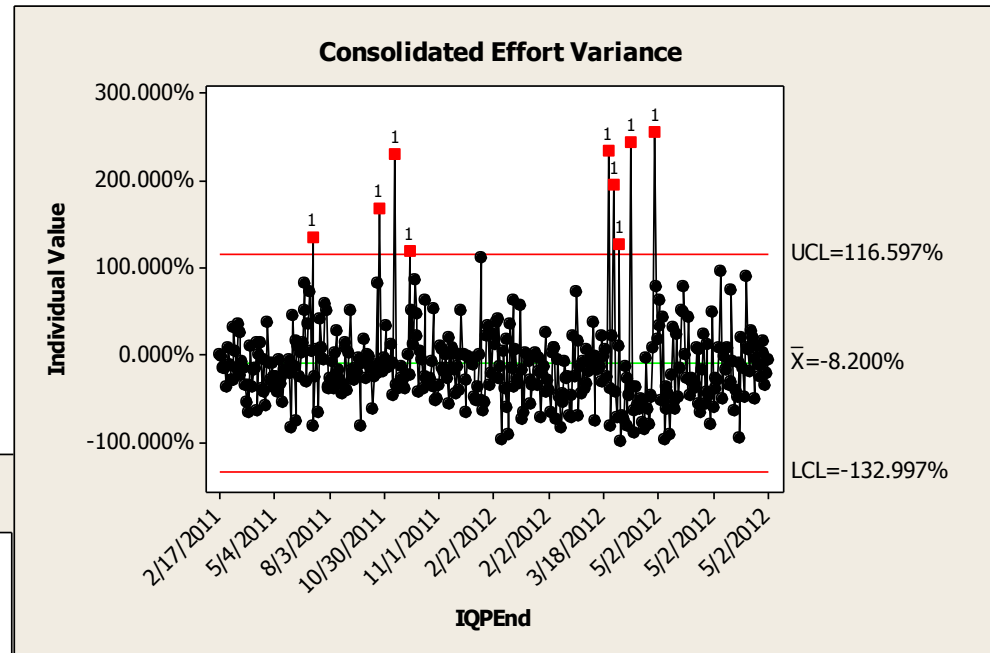
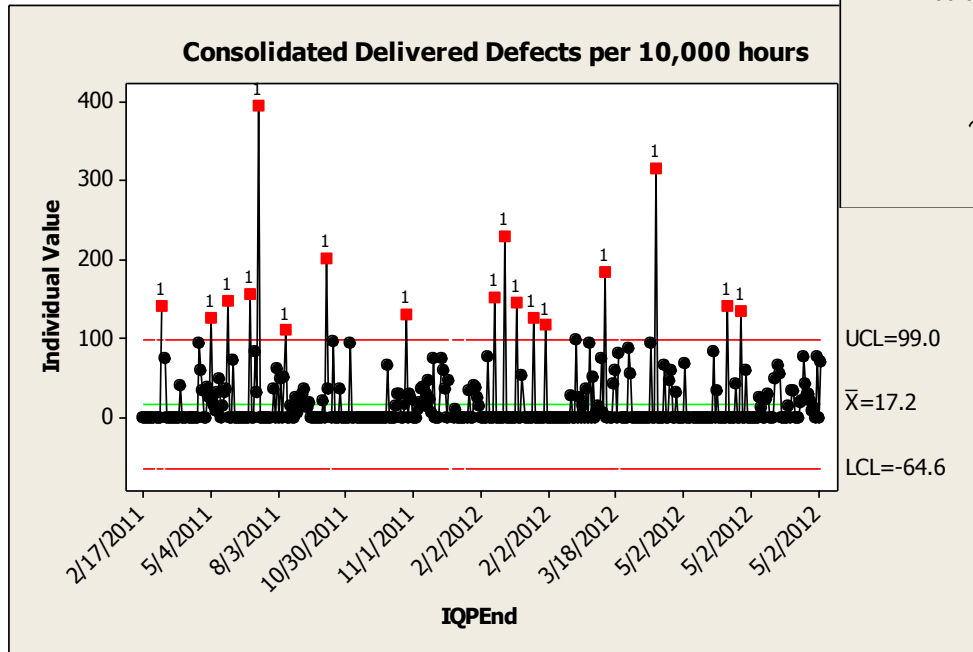
Why the Consolidated Performance Data Doesn't Reflect Business Performance

Bottom Line:

- Consolidated Performance is NOT what the customer sees!
- Performance only matters if it affects what the customer sees!



Consolidated Performance Data Results



Organization vs Delivery Organization

CMMI Definition:

- Organization – An administrative structure in which people collectively manage one or more projects or work groups as a whole, share a senior manager, and operate under the same policies.

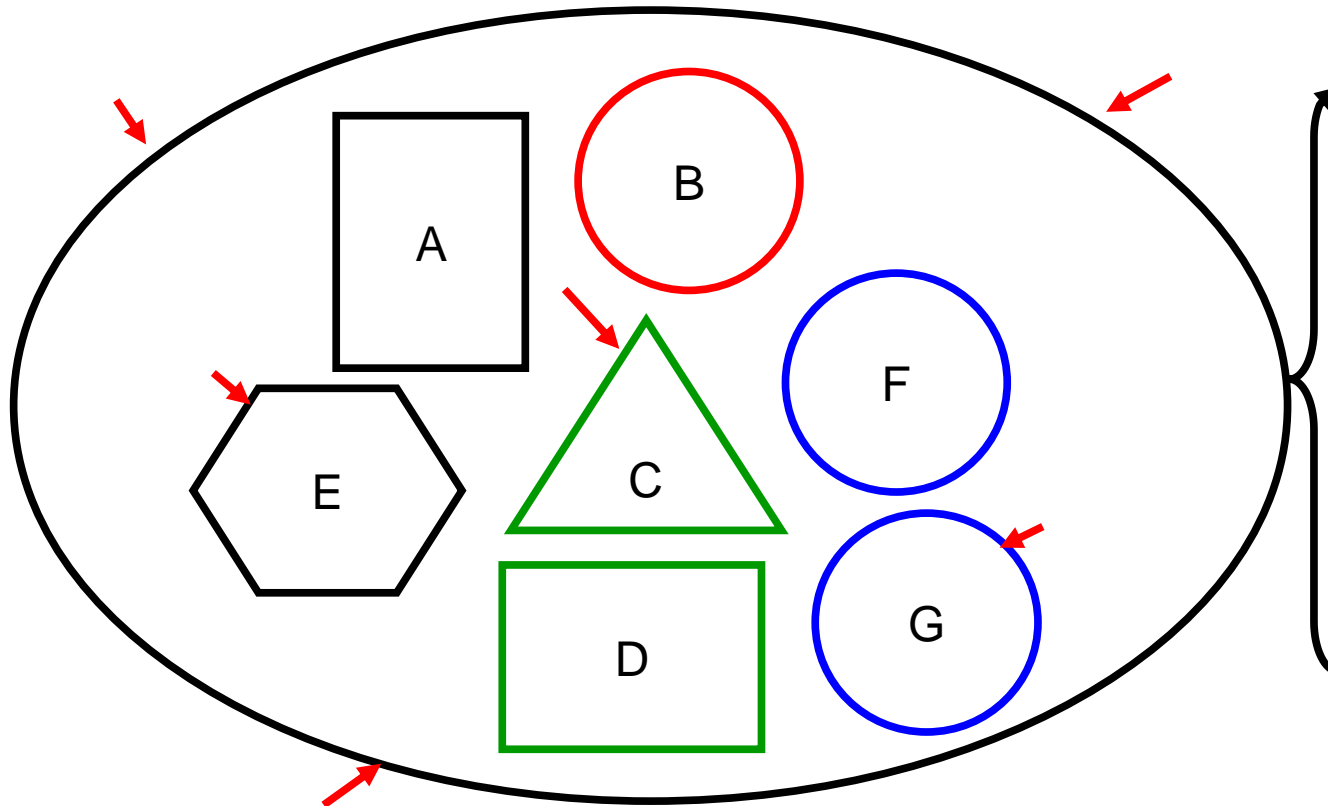
CMMI (Model) vs Reality....

- True delivery performance can only be recognized where the products or services are delivered.
- Performance management is more than just trying to address a conglomeration of business needs from across groups.
- A “Delivery Organization” is a set of programs, projects, services or accounts which all share a common customer and therefore can focus on a common set of expectations from their Voice of Customer and Voice of Management.



Common Model Expectations

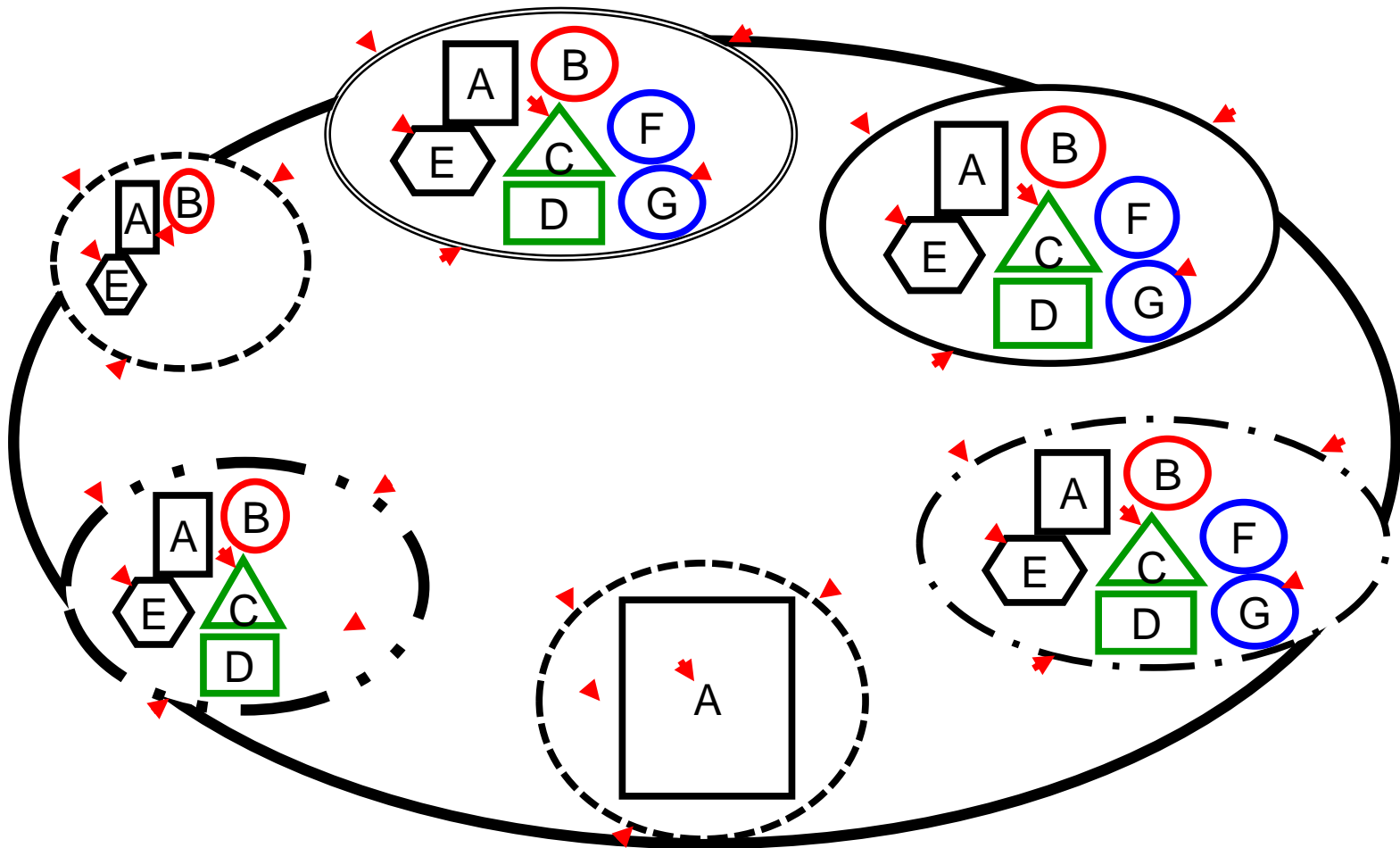
CMMI Maturity Level 4/5 Expectations



- Critical points in org. and project/work group processes are understood
- Data is used to understand and manage / improve the critical points
- Data is used for prediction and management of business performance and critical business goals

Our Reality – Organizations of Organizations

CMMI Maturity Level 4/5 Expectations

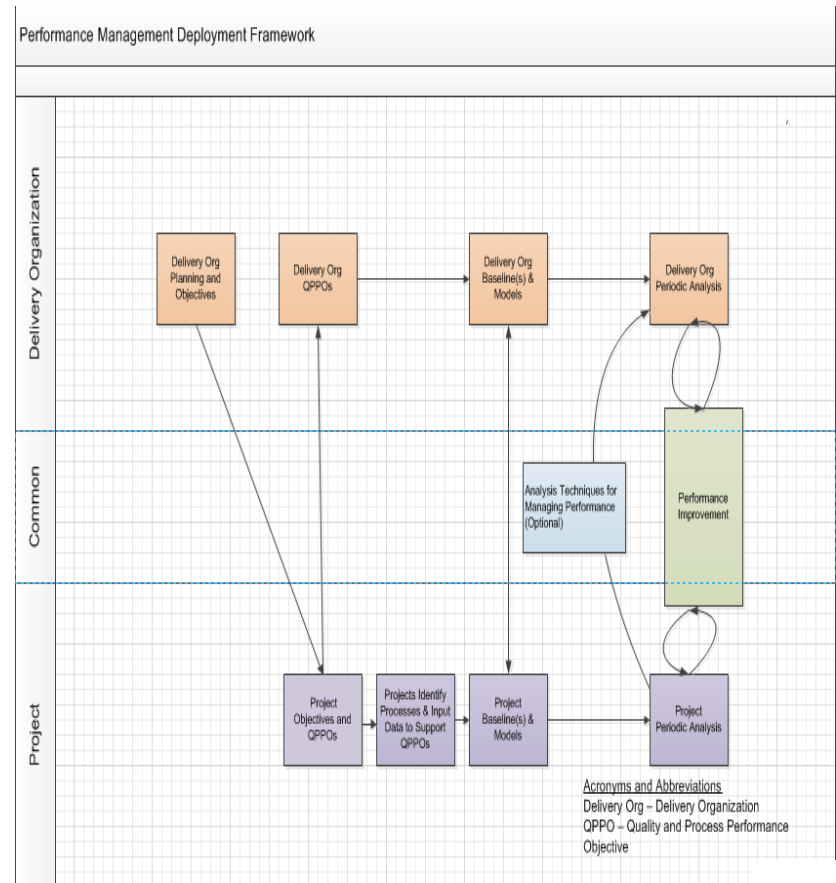
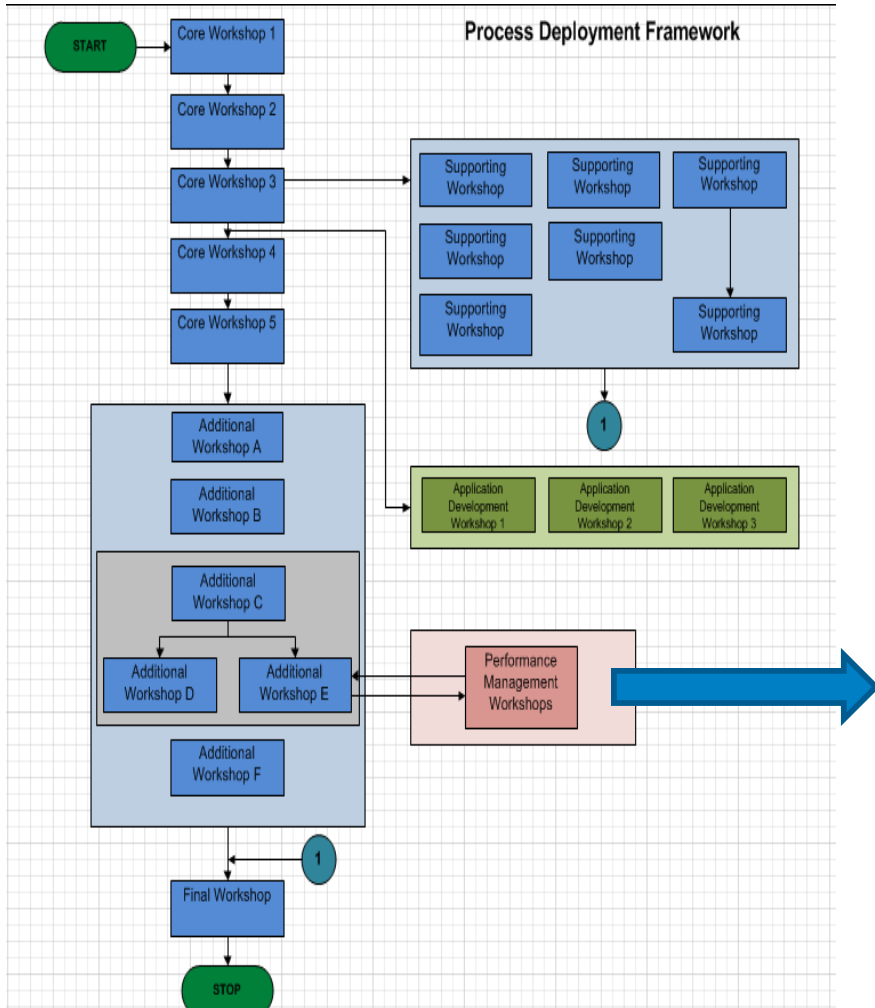


Factors that Affect Delivery Orgs

- Differences in Contracts
- Differences in Work Performed
- Differences in Organizational Structure
- Differences in Business Goals
 - Driven by Differences in Customer
 - Driven by Differences in HP Org Structure



Right Problems, Right Time, Right Skills, Right Data



Slow and Steady Wins the Race!

More specifically, project level benefits incurred through long term high maturity have included examples such as:

- 52% decrease in delivered defect counts from 2006 -2012 through use of proactive root cause analysis based on quantitative management data. The team can focus more effort on perfective changes and enhancements.
- Decrease of code fix average effort from 22.5 hours to 17.9 hours through Lean Six Sigma efforts. The impact provided decreased cycle time and increased velocity of changes for the client.
- Reduction of rework effort by 11.2% in overall rework and 32.5% in Post-Release Rework. As part of the Rework Reduction initiative that moved defect detection to earlier in the development lifecycle, effort per discovered defects was reduced by 54%.



Process Performance Models

- Models represent the unique business environment of each Delivery Organization
- The following slides are process performance models:
 - Estimating Accuracy Model
 - Break-Fix Model
 - Transactional Model

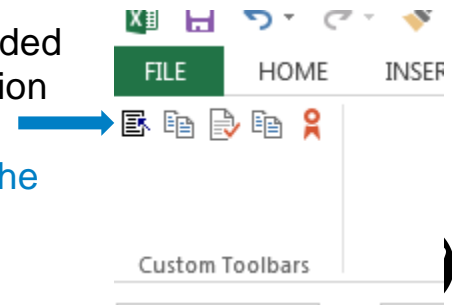


Sample Estimating Accuracy Model

Predicting Effort Variance											
SCR Number	12345	SCR Type	Full	Tailoring Notes:	Full lifecycle with 4 reviews			BA	Joan Jett		
Project	Other						IA	Jim Bowie			
UFP Estimate	129										
Inputs			Outputs								
Effort Hours			Value and Range of Predicted Effort Hours (90% confidence)			Value and Range of Predicted Effort Variance (90% confidence)					
	Estimated Effort	Actual Effort	Lower Bound	Predicted Value	Upper Bound	Lower Bound	Predicted Value	Upper Bound	Est CompDt	Act Comp Date	
Analyze	150.00		Analyze	75.0	225.0	-50.0%		50.0%	Req WPR	2/7/2014	2/7/2014
Design	200.00		Design	150.0	325.0	-25.0%		62.5%	TD WPR	3/1/2014	3/2/2014
Build	450.00		Build	375.0	500.0	-16.7%		11.1%	Code WPR	5/1/2014	
Test	75.00		Test	60.0	90.0	-20.0%		20.0%	BA Test Plan	5/15/2014	
Rework	17.00										
Total SCR	899.00		Total SCR	650.0	1170.0	-27.7%		30.1%	Testing	6/1/2014	
			Total CR Target Bounds			-50.0%		50.0%	BA #Planned TCNs		17
									BA % TCNs comp		0.00%

Similar models are used by other Delivery Organizations/Projects. Some have added additional features such as Vlookups, Automated email alerts, Automated generation of new tabs in Excel workbooks, Automated hiding of tabs, etc.

They have made these their own and are constantly making them more useful to the team!



Sample Break-Fix Model v1.0

Effort to Complete (90% conf)

Lead Estimate (to Complete)	Revised Estimate (to Complete)	Problem Complexity	Lower Bound	Most Probable Value	Upper Bound	Target Lower Bound	Target Upper Bound	Exp	Error Msg
25	25	Medium	8.57	23.01	37.45	19.92	26.10	M	
15	15	Low	0.00	11.45	30.85	8.36	14.54	M	
4	4	Low	0.00	3.16	7.12	0.07	6.25	M	
3	3	Low	0.00	2.29	6.26	0.00	5.38	M	
8	8	Low						M	No Correlation
8	8	Low	Input outside model parameter outside Model outside model para					H	Insufficient Historical Data
5	5	Low	0.00	5.07	13.24	1.98	8.16	M	
10	10	Medium	4.45	8.39	12.33	5.30	11.48	M	
30	30	Medium	13.26	27.75	42.23	24.66	30.84	M	
10	10	Low						M	No Correlation

Initial version of a Break-Fix model. This is built into their many-times-a-day management document. Initial version set one target for all work. Target initially started at a StDev of 2.51 and was then reduced to 1.03.



Sample Break-Fix Model v2.0

Effort to Complete (90% conf)

Estimate (to Complete)	Estimate (to Complete)	Problem Complexity	Lower Bound	Most Probable Value	Upper Bound	Target Lower Bound	Target Upper Bound	Exp	Error Msg
6	8	Low	3.37	5.64	7.91	3.37	7.91	L	
6	6	Low	0.00	6.55	17.89	3.31	9.79	M	
8	10	Low	put outside model parameter	outside Model	outside model para			M	No Correlation
56	56	Medium						M	Insufficient Historical Data
25	22	Low	12.21	20.00	27.80	16.76	23.24	L	
8	8	Low	put outside model parameter	outside Model	outside model para			M	No Correlation
8	8	Low	5.40	7.69	9.97	5.40	9.97	L	
8	8	Low	5.40	7.69	9.97	5.40	9.97	L	
12	12	Low	0.00	11.12	24.51	7.31	14.93	M	
15	15	Low	put outside model parameter	outside Model	outside model para			M	No Correlation
4	4	Low	put outside model parameter	outside Model	outside model para			M	Insufficient Historical Data
45	45	Medium						M	No Correlation
15	15	Medium	0.68	14.06	27.44	10.25	17.87	M	
8	8	Low						M	No Correlation
25	25	Medium						H	
25	25	Medium	12.21	20.00	27.80	16.76	23.24	L	

Second iteration of the Break-Fix model. Additional analysis was performed on the process and four targets were established based on controllable inputs.



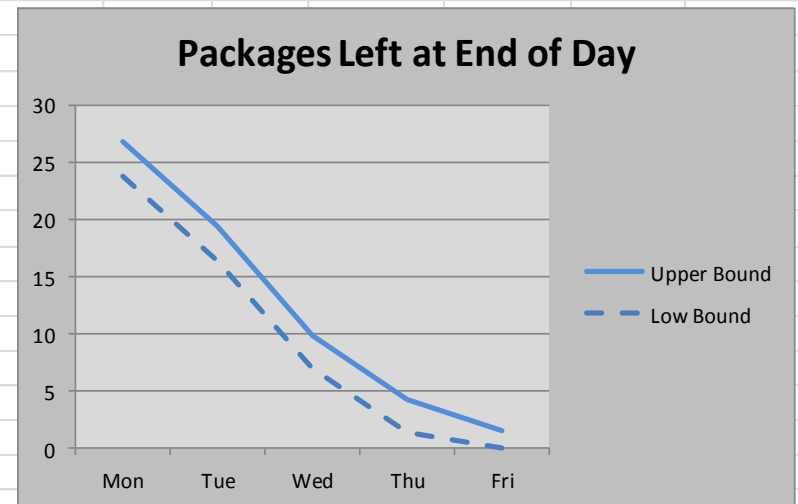
Sample Transactional Model

Input Section																																																						
<table border="1"> <thead> <tr> <th colspan="2">Calendar Data</th> </tr> </thead> <tbody> <tr> <td>Week Ending (Friday)</td> <td>10-Aug</td> </tr> <tr> <td>Today's Date</td> <td>5-Aug</td> </tr> </tbody> </table>							Calendar Data		Week Ending (Friday)	10-Aug	Today's Date	5-Aug																																										
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Assumptions:

Queue data can be automatically extracted from standardized tracking spreadsheets already kept by manager.
 Production deadline is always Friday - we never want to miss this deadline.
 Availability for testing deadline is always Thursday - we can miss this deadline occasionally.
 Model is applied only at the beginning of the working day (end of previous day).
 It is possible to determine the actual daily effort applied to those packages that are due this week.

Predicted Number of Incomplete Packages				
		Low Bound	Predicted	Upper Bound
Mon	6-Aug	24	25	27
Tue	7-Aug	16	18	19
Wed	8-Aug	7	8	10
Thu	9-Aug	1	3	4
Fri	10-Aug	0	1	2



Lessons Learned



- Establish and maintain “Local Standards” for data collection
- Analysis of the data reveals different (sub)process executions
 - Performed processes should be identified based on the data
 - Person developing the model needs input from process owners to validate data and assumptions
- Model needs to be integrated into the team’s management practice
- The more the teams use the process performance models (PPM), the more useful the models become
 - Models become more customized to project work flows
 - Models are expanded to include additional data and references to data so that it becomes more of a one-stop shop for finding the data needed (consolidation of information for seeing the ‘big picture’ view)

More Lessons Learned



- Listen to customers
 - Everyone says “we are different” – sometimes they really are!
- Recognize that pure data doesn't tell the whole story, especially consolidated data
 - Analysis must be performed with deep business and end-customer understanding
 - Separating analysis from business performance management causes problems
 - Need to bring BOTH the analysis and performance management as close as possible to the level that manages the end-customer relationship
- Have resources with the right analysis skills in place
 - Resources in the role of Quality Engineer have to have a thirst for answers and an analytic mindset, not just be happy with data collection and reporting
 - Have leaders who use data for performance management and decision making

Review

- ✓ Common Misconceptions of High Maturity
- ✓ What we have found to work
 - ✓ One Size does NOT Fit All!
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- ✓ Process Performance Model Examples
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Questions ???



Contact Information

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