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**Advanced Information Services Inc.**

## Importance of Component Postmortem

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# Postmortem

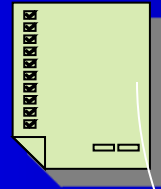
- Analyze performance against plans and goals
- Identify potential areas for improvement

“When you have completed even a small project, you have large amount of potentially useful data”

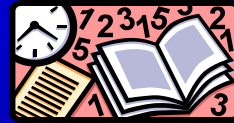
PSP: A Self-Improvement Process for Software Engineers by Watts S. Humphrey

# Project Postmortem

- Focus on Project / Organization Improvement
- Obvious and glaring issues addressed
- Not timely



Project Questionnaire



Project Data Analysis



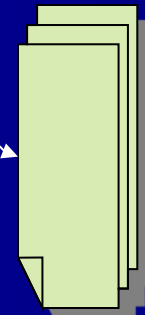
Postmortem Meeting



Stakeholder Feedback



Process Improvement Proposals (PIPs)



Postmortem Report

# Improvement Approach

- Bottom Up Driven
  - Improvements at the Individual level
  - Grow organization core asset
- Continuous Improvement
  - Lessons learned applied to the next component

# Component Postmortem

	Current Practices	What Should Happen
Data Completeness	√	√
Data Analysis		√
Improvement Opportunities		√
Feedback		√

# Data Analysis

- Not my responsibility
  - It's the coach's job
  - I focus on development, not data analysis
- What analysis
  - How much is enough?

# Component Postmortem

- Component Owner
- Analyze Component Data
  - What went well?
  - What went wrong?
  - Component Summary spreadsheet
- Incorporate Lessons Learned
  - Update personal process
  - Update personal checklists

# Component Postmortem – Data Analysis

## BASIC

- Size
  - Plan Vs Actual
- Effort
  - Plan Vs Actual by phase
  - Design Review to Design Ratio
  - Code Review to Code Ratio
  - Design to Code Ratio
- Defects
  - Defect count by Defect Type
  - Defect fix time
  - Defects found in Unit Test
- Reviews & Inspections
  - Review Rate

## ADVANCED

- Size
  - Part relative sizes
  - Identify all parts
  - PROBE Method
  - 70% Prediction
- Effort
  - PROBE Method
  - 70% Prediction
- Defects
  - Yield
  - A/F Ratio



# Component Summary

TSP Workbook:				...	<input checked="" type="checkbox"/> Format using Guidelines				About ...				
Assembly Name:	<Assembly Name>												
Size Data	Plan	Actual	% Dev.										
Base	0	0	#N/A										
Deleted	0	0	#N/A										
Reused	0	0	#N/A										
N&C	0	0	#N/A										
Total	0	0	#N/A										
Productivity	0.00	0.00	#N/A										
	Effort (Hours)			Defects Injected			Defects Removed			Yield	Injection	Removal	Review Rate
	Plan	Actual	% Dev.	% Dist.	Plan	Actual	% Dev	Plan	Actual	% Dev	Rate (Def /Hour)	(LOC/Hr)	
Planning	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
Requirements	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
REQ Inspection	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
HLD	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
HLD Inspections	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
DLD	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
DLDR	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!	#DIV/0!	
Test Development	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
DLD Insp	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
Code	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
CR	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!	#DIV/0!	
Code Insp	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
Unit Test	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
Build & Int Test					0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
System Test					0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
Postmortem	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!		
TOTAL	0.0	0.0	#N/A	#DIV/0!	0.0	0	#N/A	0.0	0	#N/A			
Design Review to Design Ratio:			#DIV/0!										
Code Review to Code Ratio:			#DIV/0!										
Design to Code Ratio:			#DIV/0!										

# Component Summary - Example

TSP Workbook:				...	<input checked="" type="checkbox"/> Format using Guidelines	About ...								
Assembly Name:														
<b>Size Data</b>	Plan	Actual	% Dev.											
Base	0	0	#N/A											
Deleted	0	0	#N/A											
Reused	0	0	#N/A											
N&C	240	301	25%											
Total	240	301	25%											
<b>Productivity</b>	7.95	7.90	-1%											
	<b>Effort (Hours)</b>			<b>Defects Injected</b>			<b>Defects Removed</b>			<b>Yield</b>	<b>Injection</b>	<b>Removal</b>	<b>Review Rate</b>	
	Plan	Actual	% Dev.	% Dist.	Plan	Actual	% Dev	Plan	Actual	% Dev		Rate (Def /Hour)	(LOC/Hr)	
Planning	2.1	1.2	-43%	3%	0.0	0	#N/A	0.0	0	#N/A				
Requirements	0.0	0.0	#N/A	0%	0.0	0	#N/A	0.0	0	#N/A				
REQ Inspection	0.0	0.0	#N/A	0%	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!			
HLD	0.0	0.0	#N/A	0%	0.0	0	#N/A	0.0	0	#N/A				
HLD Inspections	0.0	0.0	#N/A	0%	0.0	0	#N/A	0.0	0	#N/A	#DIV/0!			
DLD	4.2	3.1	-26%	8%	2.8	5	79%	0.0	0	#N/A		0.90		
DLDR	2.0	1.2	-40%	3%	0.0	0	#N/A	1.2	2	67%		40.0%	1.67	250.83
Test Development	0.0	0.0	#N/A	0%	0.0	0	#N/A	0.0	0	#N/A				
DLD Insp	4.0	4.3	8%	11%	0.0	0	#N/A	0.8	1	25%		33.3%	0.23	
Code	6.9	12.4	80%	33%	6.5	12	85%	0.0	0	#N/A		0.52		
CR	2.5	2.9	16%	8%	0.0	0	#N/A	2.2	3	36%		21.4%	1.03	103.79
Code Insp	5.0	6.5	30%	17%	0.0	0	#N/A	1.7	2	18%		18.2%	0.31	
Unit Test	3.0	5.6	87%	15%	0.0	0	#N/A	3.4	5	47%		55.6%	0.89	
Build & Int Test					0.0	0	#N/A	0.0	0	#N/A		0.0%		
System Test					0.0	0	#N/A	0.0	4	#N/A		100.0%		
Postmortem	2.6	2.1	-19%	6%	0.0	0	#N/A	0.0	0	#N/A		#DIV/0!		
<b>TOTAL</b>	<b>30.2</b>	<b>38.1</b>	<b>26%</b>	<b>100%</b>	<b>9.3</b>	<b>17</b>	<b>83%</b>	<b>9.3</b>	<b>17</b>	<b>83%</b>				
Design Review to Design Ratio:			39%											
Code Review to Code Ratio:			23%											
Design to Code Ratio:			25%											

# Component Postmortem Questionnaire - 1

## ➤ Data Completeness

- Checked into configuration control environment
- Actual size entered
- Effort entered
- Defects entered
- Inspections data entered
- Inspections are closed
- Tasks are closed

# Component Postmortem Questionnaire - 2

## ➤ Data Analysis

- Size deviation: what inferences can be made
- Effort deviation: what inferences can be made
- Effectiveness of reviews and inspections:  
Identify changes to checklists
- Development lifecycle: Adequate planned effort distribution

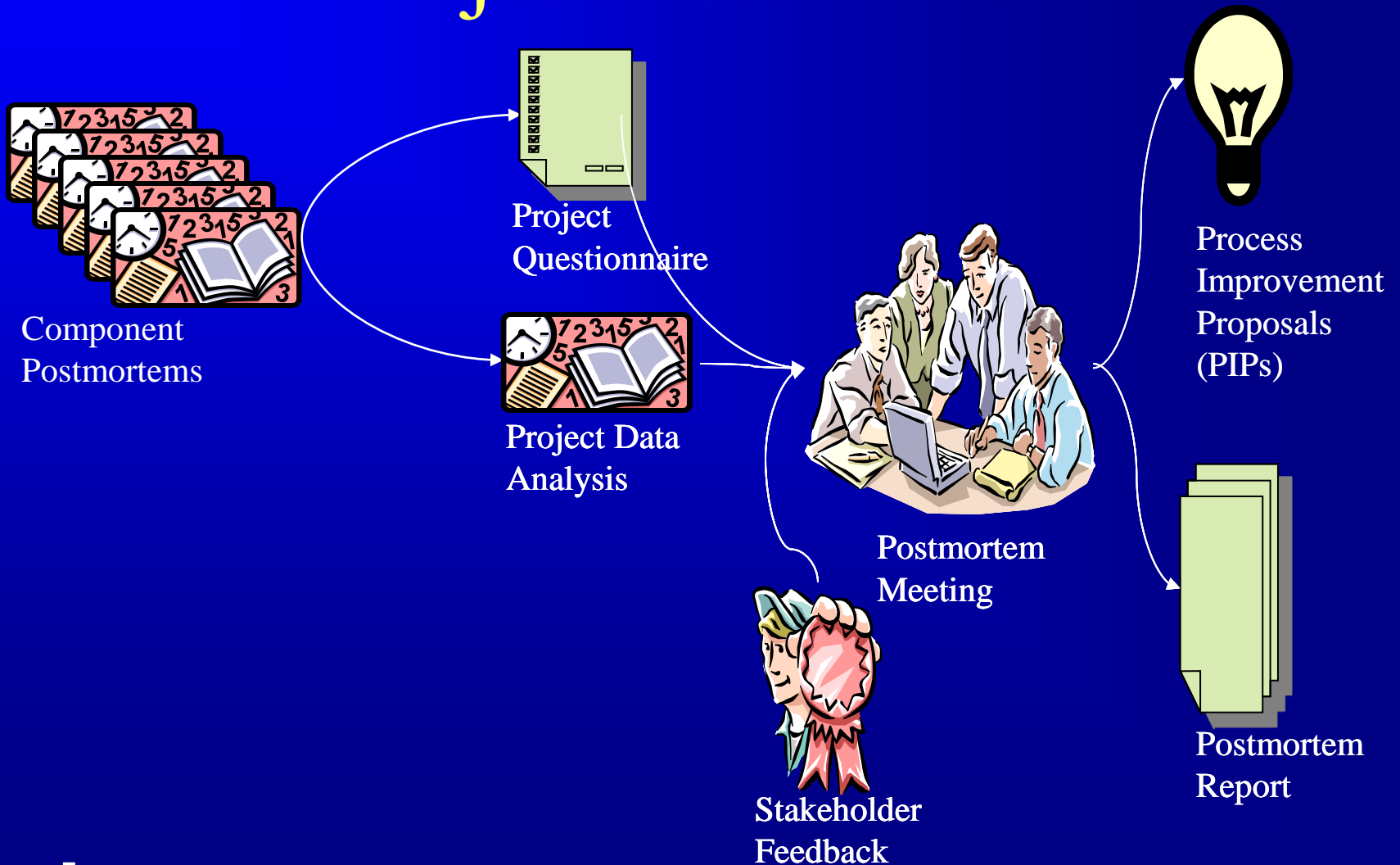
# Component Postmortem Questionnaire - 3

- Improvement Opportunities
  - What could you have done differently to shorten schedule without affecting quality
  - If you had the opportunity to do this component again, what would you do differently
  - Personal Process Improvement Proposals

# Postmortem Outcome

- Updated Personal processes
  - Shortest development path
  - Accurate phase percentage distribution
  - Accurate quality plan
- Updated Review checklists
  - Improved yield
- Updated Proxy size database
  - Realistic size estimates
- Updated Regression parameters
  - Realistic plans

# Project Postmortem



# Execution

- Training
  - Update postmortem process
  - Enhance data analysis reports
- Support
  - Coach assists in setting goals
  - Coach assists with data analysis
- Tool Set
  - Component summary
  - Visual highlights / indicators
- Discipline



# Postmortem Process Script

Step	Activities	Description
1	Defect Recording	<ul style="list-style-type: none"> <li>- Review the Project Plan Summary to verify that all of the defects found in each phase were recorded.</li> <li>- Using your best recollection, record any omitted defects.</li> </ul>
2	Defect Data Consistency	<ul style="list-style-type: none"> <li>- Check that the data on every defect in the Defect Recording log are accurate and complete.</li> <li>- Verify that the numbers of defects injected and removed per phase are reasonable and correct.</li> <li>- Determine the process yield and verify that the value is reasonable and correct.</li> <li>- Using your best recollection, correct any missing or incorrect defect data.</li> </ul>
3	Size	<ul style="list-style-type: none"> <li>- Count the size of the completed program.</li> <li>- Determine the size of the base, reused, deleted, modified, added, total, added and modified, and new reusable code.</li> <li>- Enter these data in the Project Plan Summary form.</li> </ul>
4	Time	<ul style="list-style-type: none"> <li>- Review the completed Time Recording log for errors or omissions.</li> <li>- Using your best recollection, correct any missing or incomplete time data.</li> </ul>
5	<i>Analysis</i>	<ul style="list-style-type: none"> <li>- <i>Generate data required for future planning process.</i></li> <li>- <i>Complete data analysis based on defined goals.</i></li> </ul>

Modified PSP2.1 Postmortem Script

# Summary

- Every experience is an opportunity to learn
- Learn from small / trivial incidents as well as the highlights of the experience
- Continuously improve

“Your experience is a failure if you fail to learn from it.”

# Questions?

# Contact Information

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