Root Cause Analysis Business Case
Cost/Benefit Analysis

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ANALYSIS OBJECTIVE

The following analysis will compare the benefits of using a manual Root Cause Analysis approach versus an automated knowledge management system such as PROACT. The outcomes will demonstrate the costs of inefficiencies using a manual approach as opposed to an automated knowledgement management approach. The sources of the assumptions made in this analysis were from averages provided by Reliability Center, Inc. (RCI) and its client's experience in the field and public domain texts on Six Sigma applications in healthcare.

General Assumption: 1 Six Sigma Project = 1 Root Cause Analysis Project

Six Sigma Manual Approach Assumptions*:
Number of Systems Included in Analysis: 15
Avg. # of Improvement Proj./Yr/System: 6 - 9 (7.5 Avg.)
Avg. # of Team Members/Proj.: 6 - 10 (8 Avg.)
Avg. # of Team Sessions Per Proj.: 12 - 18 (15 Avg.)
Avg. Length of Each Team Session: 2 - 4 Hrs (3 Avg.)
Avg. "Homework" Hrs/Team Member/Proj.: 15 - 20 Hrs (17.5 Avg.)
Avg. Cost/Hr of Team Member (Salary): $20 - $30/Hr ($25/Hr Avg.)

PROACT Approach Assumptions*:
Number of Systems Included in Analysis: 15
Avg. # of Improvement Proj./Yr/System: 6 - 9 (7.5 Avg.)
Avg. # of Team Members/Proj.: 3 - 5 (4 Avg.)
Avg. # of Team Sessions Per Proj.: 2 - 4 (3 Avg.)
Avg. Length of Each Team Session: 2 - 4 Hrs (3 Avg.)
Avg. "Data Collection" Hrs/Team Member/Proj.: 3 - 5 Hrs (4 Avg.)
Avg. Cost/Hr of Team Member (Sal.): $20 - $30/Hr ($25/Hr Avg.)

	Six Sigma Manual Approach		PROACT RCA Approach	
# Systems	15		15	
Avg. Projects/System	7.5	x	7.5	x
Total Projects	112.5		112.5	
Avg. Team Members/Project	8		4	
Total Number of Team Members/Yr	900		450	
Avg. # of Session/Team Member	15	x	3	x
Avg. Hours/Session	3	x	3	x
Total Manhours of Meeting Time	40500		4050	
Avg. Homework Hours/Team Member	17.5		4	
Total Number of Team Members/Yr	900	x	450	x
Total Manhours for All Homework	15750		1800	
Total Manhours for All Projects	56250		5850	
Avg. Cost/Manhour (MH)	25	x	25	x
Total MH Costs for Annual Projects	$1,406,250		$146,250	
Avg. MH Cost/Project	$12,500		$1,300	
Equivalent Full Time Positions (based on 2080 Hours)	27		3	

Conclusions

Based on the above calculations, using the PROACT RCA methodology and software can reduce the cycle time of the average manual analysis by 90%. This cuts the average MH costs per analysis from $12,500 each to $1,300 each or an annual savings of $1,260,000. This also reduces the amount of equivalent consumed analysis resources (personnel) by 90% as well, dropping the number of consumed resources from 27 to 3. Convesely, this means that using the PROACT RCA methodology and software can yield 10 times more analyses in the same given time period as the manual approach.

This analysis took into account only efficiencies of time and resources for conducting analyses. Outcomes of the analyses and associated Returns-On-Investement (ROI) for eliminating the risk of recurrence of the analyzed events were not factored in. While these conclusions may seem too outrageous and overexaggerated, Reliability Center, Inc. has 30+ years of proven and documented experience to show this is not uncommon. Average ROI's for using PROACT RCA range from lows of 1500% to highs of 18000% and are legally documented in our text entitled, ROOT CAUSE ANALYSIS: IMPROVING PERFORMANCE FOR BOTTOM LINE RESULTS.

Projected Annual Savings Using PROACT	$1,260,000	(Annual MH Manual - Annual MH PROACT)
Estimated Investment of PROACT RCA Only	135,660	(Estimated proposal for 45 Enterprise PROACT users)
Projected ROI (Year 1)	929%	
Payback Period	1.29	Months