



## CMMS Asset Life Cycle Analysis Part of the Forgotten ROI

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When prospective customers look to us for a CMMS solution, common first “needs” are “I need to better track my work orders” or “PM scheduling needs to be automated” or some other day-to-day operational improvement. All of these are real, critical needs that a quality CMMS technology must deliver. Strong PM scheduler and work order management module do provide serious ROI, but there can be so much more: Predictive Maintenance Analysis (PMA).

There are many components to PMA. The focus of this discussion is something we like to call “Asset Life Cycle Analysis” (ALCA). This is a macro approach to examining critical data for all assets/equipment to help “grade” each asset. An “A” is a great grade; an “F” is failing – just like school. Many factors go into calculating ALCA, but the bottom line is that with little effort, ALCA should be able to help you make several key decisions to better plan capital expenditures, better analyze good vendors from bad, better evaluate PM effectiveness and others, all contributing to a better ROI. A good CMMS system should be able to provide this analysis based on existing captured day-to-day operation information from PMs, WOs and other sources.

How can we gain this “forgotten ROI”? Here are two examples that best illustrate this. The first example is using a CMMS system that cannot do adequate PMA.

A General Manager of a facility sends out an email to his or her managers asking for capital budgets to be turned in promptly by the end of the month. John – the Director of Operations sits down, starts filling a spreadsheet with equipment he thinks will need to be replaced because of several reasons, primarily its age. “Better put that AC unit 2 on the list” says Pete his maintenance manager, “she’s the oldest one we have”. When John asks Pete about other equipment that may be taking up more repair time, Pete is unsure. “Let me look around my notes, do some research and get back with you” says Pete.

Second example/same facility:

A General Manager of a facility sends out an email to his or her managers asking for capital budgets to be turned in promptly by the end of the month. John – the Director of Operations sits down, starts filling a spreadsheet with equipment he thinks will need to be replaced because of several reasons, relying on ALCA data. “That boiler unit we have is only 5 years old, but already she’s showing signs of replace vs. repair” says Pete his maintenance manager. “Good new is that the antique AC unit we have on the roof is doing great despite her age. Probably can hold off another year to replace it”, says Pete.

Peter was able to identify that, despite the age of an asset, key performance indicators can help derive analysis that the effectiveness of PM and WO processing, labor and other factors can help shift asset capital spending to where it is more needed, a significant help in ROI on a good CMMS system. Note, a single report from any CMMS cannot automatically make purchasing decisions, but can give real hard evidence to finalize research on capital expenditure planning.

### **Supporting Examples:**

Asset Life Cycle Analysis (as presented in Bigfoot CMMS) “grades” equipment based on 3 critical factors: age, frequency of failure, and rising/falling costs factors. Note in the screens below, The

Air Conditioner unit, although 8 years past its expected life shows a steady or even decreasing frequency of failure plus a steady or decreasing maintenance cost. The Boiler unit is newer, but is not doing well from a frequency of failure rate nor maintenance costs.

Asset Life-Cycle Analysis

Bigfoot Asset Life-Cycle Analysis

Refresh | Print Spreadsheet | Exit

Sort: Equipment name

Key: DS/PL=depreciation schedule/projected life  
 Pred=predictive maintenance analysis  
 Grade B+ = 2 factors green/1 red  
 Grade B = 1 green/2 red  
 Grade A = all 3 factors green

Predictive maintenance information: From date: 01/01/2003 To date: 02/20/2008

Based on log book entries  
 Based on work order entries

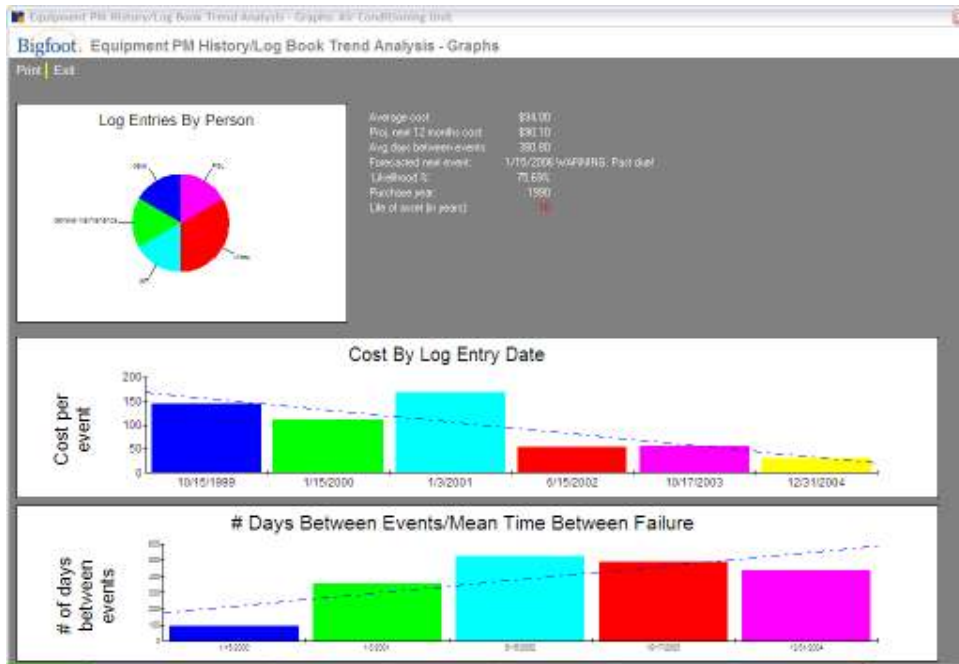
Include sched. proc. Yes

	Name	Category	Sub-Category	Grade	DS/PL: Years left factor	Pred Event factor (slope)	Pred Cost factor (slope)	DS/PL: Asset life (years)	DS/PL: Book value	DS/PL: Purchase cost	DS/PL: Purchase year	DS/PL: Replace cost	DS/PL: A/P/M/E	Pred. Proj. 12m Exp.
1	Air Conditioning Unit	Building East	HVAC	B	3.00	good	good	10	\$1,000.00	\$10,000.00	1990	\$15,000.00	20%	\$215.04
2	Boiler Unit 1	Building West	HVAC	D	3.00	good	good	8	\$16,250.00	\$50,000.00	2003	\$11,000.00	12%	\$226,392.30
3	Chiller #1	Building East	Chillers	B	5.00	good	good	10	\$5,000.00	\$57,000.00	1996	\$0.00		\$5,475.00
4	Chiller #2	Building West	Chillers	A	5.00	good	good	10	\$16,000.00	\$40,000.00	2003	\$0.00		\$5,475.00
5	Delivery Truck #1	Shipping Dock	Delivery Trucks	A	3.00	good	good	8	\$7,250.00	\$20,000.00	2003	\$34,000.00		\$4,322.37
6	Delivery Truck #2	Shipping Dock	Delivery Trucks	A	3.00	good	good	6	\$7,000.00	\$17,000.00	2005	\$0.00		\$4,322.37
7	Grinder A	Lab	Grinders	A	1.00	good	good	5	\$0.00	\$10,000.00	2004	\$15,000.00		\$9,961.27

Below is micro analysis showing the same data, but specific to the above listed equipment. Note the trend lines in the bar charts.



The Air Conditioner unit, although 8 years past its expected life shows a steady or even decreasing frequency of failure plus a steady or decreasing maintenance cost.



**Conclusion:**

In conclusion, it is critical for organizations trying to automate their maintenance operations to understand and utilize the technology beyond operational improvements and see other valuable aspects of CMMS. Asset Life Cycle analysis is one of many areas in predictive maintenance analysis that can make significant ROI from your CMMS technology.