UNLOCKING RETURN ON INVESTMENT FOR MAINTENANCE

TABLE OF CONTENTS

I

INTRODUCTION

Time and time again, no matter what I propose to my company, my boss asks me for some kind of quantifiable measure that illustrates how we are going to benefit financially from this new shiny thing we are buying. In some cases, it seems pretty obvious to me, in other cases, not so much, and I guess when I can't really make a business case for spending, it just makes good sense that we don't. But what about those times when I know it's going to be great for the company, I can picture it working, I know we are going to save money…but I just can't seem to prove it, just yet.

Typically, to calculate Return on Investment (ROI) you can divide the gain measured by the investment with the cost of the investment. Seems simple enough, except in order to get to an accurate enough number, you need to focus on the often missing variable, measurability.

The return on investment formula:

$$ROI = \frac{(Gain\ from\ Investment\ -\ Cost\ of\ Investment)}{Cost\ of\ Investment}$$

It is very difficult to truly measure ROI because often enough, you haven't established a process for numerically calculating the status quo compared to the proposed new method. The number one mistake that most organization fail to do when purchasing anything new is accurately measure the current situation prior to adding to it.

In the case of adding software, that predicament becomes even more relevant and requires an in-depth look into operational procedures at every level. But let's face it, we don't always have the time or expertise to fully realize the scope of our current costs of operations among all other aspects of savings a new software package can bring to us. In many cases, the software vendor with whom you are working, should help you figure out which parts of your business will be affected for the better with the addition of their software.

Bottom line is companies that adapt new technology-based solutions expect to realize an increase in profit through operational efficiencies at its core; this is especially true for Maintenance related software. Naturally, the more automated the process, the faster one is to expect a Return on Investment and, the more streamlined the operations become, the more information management will have at their fingertips to make those key business decisions that will boost profit even more.

THE PITFALLS OF SOFTWARE PURCHASING

So, what's the catch? Technology solutions are not always so simple to implement and what is promised isn't always what is delivered. To prevent your business from getting bogged down by a long and expensive process, it's important that you consider the major hot-points of implementing a new way of doing business and selecting the right software for your organization.

Efficiency

Is this solution going to make my business more efficient? Obvious question - yes, but history shows that many companies get so focused on 'technology' as the solution that they forget to look at why they wanted technology in the first place. When researching a new software solution, look for specific time saving opportunities that will cut down on the amount of steps a process would take with the new software in place. Those specifics can become the measure for budgeting in relation to the software purchase/implementation and ongoing expense.

Relevant Features

So many times a software vendor will sell you their software package based on its ability to do so many different things. During the sales process, the vendor has little difficulty saying Yes to all of your questions regarding usage and flexibility by virtue of its broad range of developed tools. The problem arises when it's actually time to use the software. Research has shown that the average user will end up using less than 20% of a software solution's package ongoing. In a sense, it stands to reason that you are paying for 80% of software development costs that you will never end up using. The most common phrase heard when asking someone to transfer your call to another person on a telephone is, "I will try, but I'm not sure if I'll get this right, so if I disconnect you, please call back." What good are all the extra features, if you don't know how to use them? Make sure that the software solution that you are looking to purchase does what you want well, first and foremost. Concentrate on three maybe four key improvements in work flow and make sure your staff takes full advantage of those features.   Try not to get sold on the 'one solution for everything' angle by remembering what relevant features you will actually use on a daily basis.

Costs

Is the initial investment too large and what are my ongoing support costs? Many software companies hide the overall costs of using their product through the omission of key factors. Traditional software comes with an initial purchase price followed by annual user licensing fees and an immeasurable I.T. infrastructure cost. Most advanced software packages require you to install the application onto your servers. You might need to hire someone to run and maintain the servers and most importantly how the information is backed up and secured on those servers. Will you need a secondary server to back up your information? This is why it is important to know all of the facts about your desired product prior to making an initial investment. Look for web-hosted solutions that host your information for you. You will automatically save on any internal information management costs including the need to buy expensive servers. In a web-hosted solution like Maintenance Care, user licenses are unlimited, plus, your upgrades are included. Traditional software will often charge a premium dollar for new upgrades, and urge you to follow with them, by eventually refusing to support the old package. Web-hosted solutions offer you the latest upgrade package for the entirety of your membership in real time, from any locations without additional installation (only require an internet browser).

Long Term Savings

As information about your operation becomes more readily available to you upon using your new software package, make sure your solution provides strong (and customizable) reporting. Imagine being able to schedule a pre-warranty expiry check up on your HVAC unit, to help reduce unnecessary costs of out of pocket expenditures. Preventive maintenance scheduling will not only help at reducing the cost of the operation, but will help to reduce your insurance premiums by eliminating and mitigating liability exposures. Reporting is key to allowing you to create a long term savings plan for your home and give you that extra motivation for the ongoing usage of a software package.

MAINTENANCE SOFTWARE ROI ON PRODUCTIVITY

Maintenance productivity, in most companies, averages between 25% and 35%, which is equivalent to less than 3 hours on an 8-hour shift of hands-on activities.

Most lost productivity can be attributed to the following:

- Waiting on parts
- Waiting on information, drawings, instructions etc…
- Waiting for equipment to be shut down
- Waiting on rental equipment to arrive
- Waiting on other crafts to finish their part of the job
- Running from emergency to emergency

While 100% productivity is an unrealistic goal for any maintenance organization, a more realistic percentage of 65% is achievable. The productivity of maintenance technicians can be improved by concentrating on basic management techniques such as:

- Planning jobs in advance
- Scheduling jobs and coordinating schedules with operations
- Arranging for parts to be ready
- Coordinating availability of tools, rental equipment, etc…
- Reducing emergency work below 50% level with preventive maintenance

By using maintenance software, planning time per task is reduced resulting in more tasks coordinated and completed. The result is an increase in time for preventative maintenance activities, which in turn, helps reduce the amount of emergency and breakdown activities. The trickle down effect continues by resulting in fewer scheduling changes and therefore increasing productivity by reducing travel and wait times. Successful users of computerized maintenance management systems have indicated an increase in productivity by 28%.

The following is an example for calculating potential savings in maintenance labor costs:

1. Time wasted by staff looking for spare equipment parts =	15%
2. Time spent looking for information about a work order =	10%
3. Time wasted by starting wrong priority work order =	3%
4. Time wasted by equipment not being ready to work on =	3%
5. Total wasted time =	31%
6. Total number of Maintenance Staff =	2
7. Multiply line 6 by 2080 (hours worked per employee for a year), Hr =	4160
8. Total wasted hours for a Maintenance Staff (multiply lines 5 and 7), hr =	1289.60
9. Average labor rate, including benefits for a Maintenance Staff, $/hr =	20.00
10. Potential savings, $ (multiply lines 8 and 9)=	$25,792

Total Estimated Savings on productivity from using a maintenance software, $16,764.80 / year

(multiply line 10 by percentage that describes your facility)
No work order or inventory system, 75-100%

MAINTENANCE STAFF PRODUCTIVITY WORKSHEET

1. Time wasted by staff looking for spare equipment parts: %_____
    No inventory system (15-25%)
    Manual inventory system (10-20%)
    Work order system and inventory system (5-15%)
    Computerized inventory and manual work order system (0-5)

2. Time spent looking for information about a work order: %_____
    Manual work order system (5-15%)
    No work order system (10-20%)

3. Time wasted by starting wrong priority work order: %_____
    Manual work order system (0-5%)
    No work order system (5-10%)

4. Time wasted by equipment not being ready to work on: %_____
    Manual work order system (0-5%)
    No work order system (10-15%)

5.   Total wasted time: %_____

   (add lines 1, 2, 3, and 4)

6. Total number of Maintenance Staff:

7. Multiply line 6 by 2080, hr _____
    (normal hours worked by an employee for a year)

8. Total wasted hours for a Maintenance Staff, hr _____
    (multiply lines 5 and 7)

9. Average labor rate for Maintenance Staff, $/hr_____

10. Potential savings, $ (multiply lines 8 and 9) _____
    (multiply line 10 by percentage that describes your facility)
    No work order or inventory system, 75-100%
    Manual work order system and inventory system, 50-75%
    Computerized inventory and manual work order system, 25-40%

Total savings: $_____

HOW PREVENTIVE MAINTENANCE CAN SAVE MONEY

Over the years, preventive maintenance has been more popular in principle than in practice. How can one truly determine the positive financial impact that a good PM plan can have on your bottom line. To answer this question, an analysis of preventive maintenance needs to be conducted by developing a system that would quantify the net value of investing in preventive maintenance.

The Analysis Should Identify:

- Actual cost of preventive maintenance;

- Effects of preventive maintenance on expected useful life;

- Cost of repair/corrective maintenance;

- Frequency of required repairs when equipment is not maintained;

- Cost of replacing equipment;

- Effect of preventive maintenance on energy consumption;

- Expected useful life of equipment; and

- Taking Into Consideration:

    - Type of equipment in each building (e.g., chillers)

    - Age of equipment

    - Amount of equipment (e.g., number of chillers)

    - Annual preventive maintenance expenditures for equipment

YOUR SAMPLED CASE STUDY

For simplicity, limit your own analysis to about 15 pieces of equipment. Gathering all of the data related to the equipment, an average cost and age could then be calculated for each asset.

The most difficult information to obtain is the effect of maintenance on the expected useful life of equipment. Using the most conservative estimates from equipment manufacturers, reference books and sales material, you can now begin to build your financial model. Because lost revenue due to downtime can't really be quantified, zero down time is used in the model.

Use this example to compare costs for each of the 15 pieces of equipment in your sampled case study. By completing the exercise, you should begin to see the potential cost savings related to proper Preventive Maintenance. Using Maintenance Care as an example, that software helps in the execution and monitoring of your Preventive Maintenance plan, helping you maximize performance from your equipment at the lowest possible costs.

- Assuming a time frame of 25 years -

Replacing a 10-year-old, 7-horsepower air compressor would cost $32,900. Let's say that the compressor should last 20 years with proper preventive maintenance but only 16 years without it. Proper preventive maintenance will cost $472 per year. Repairing the compressor will cost $944 per incident. If maintained properly, it will need to be repaired once every 4 years. If not, repairs will be needed every 3 years. With preventive maintenance, the compressor will need to be replaced in year 10; otherwise, it will have to be replaced twice, in year 6 and year 22. Comparing the two scenarios indicates that the preventive maintenance scenario has financial benefit of $22,988.

10 Year-Old Compressor - Purchase Cost $32,900

YEAR	ITEM	NO PM	ITEM	PM
1				
2				
3	Repair Cost	$944.00		
4			Repair Cost	$944.00
5				
6	Item Replacement	$32,900.00		
7				
8			Repair Cost	$944.00
9	Repair Cost	$944.00		
10			Item Replacement	$32,900.00
11				
12	Repair Cost	$944.00		
13				
14			Repair Cost	$944.00
15	Repair Cost	$944.00		
16				
17				
18	Repair Cost	$944.00	Repair Cost	$944.00
19				
20				
21	Repair Cost	$944.00		
22	Item Replacement	$32,900.00	Repair Cost	$944.00
23				
24				
25	Repair Cost	$944.00		
			Total PM Cost	$11,800.00
	TOTAL	**$72,408.00**	**TOTAL**	**$49,420.00**
			VARIANCE	**$22,988.00**

Preventive Maintenance adds years to the equipment's life, avoiding the extremely large capital outlay needed to replace it. The longer the capital expense can be delayed, the higher the return on investment. Maintaining all the equipment in the portfolio produces significant returns, which offers a powerful argument for the value of preventive maintenance and a powerful argument for maintenance software.

LIABILITY & RISK MANAGEMENT ROI

Standard of Care

When it comes to liability, a well-maintained maintenance software can help show that you have done your due diligence for the safety of your visitors or residents.

One of the goals of cmms software is to identify gaps in your processes that may result in a failure to prevent incidents causing harm or damage. It is the responsibility of the property owner (or its facilitators) to avoid negligence by deploying and tracking a prevention plan that shows, an awareness to potential hazards and a willingness to act upon them. Otherwise known as 'Standard of Care', it is expected that when someone enters your property, certain standards of care must be met for that visitor or resident.

Many property owners fail to recognize the importance of establishing, track-able procedural processes, to help minimize their exposure to negligent acts in cases of accidents. For example, in the instance after a snowfall, is the snow promptly cleared? In the case of an equipment-failure causing physical harm, can a schedule of preventative maintenance and maintenance history be produced to show standard of care?

Those who can demonstrate that they take regular steps needed to help prevent injuries or accidents show that they meet the standard of care.

Maintenance Software Reduces Risk

Standard of Care is very complex, but in basic terms it is the standard by which one would expect to be treated while one is in the care of another. Maintenance software helps to prove that you have taken all the necessary steps to maintain and provide a safe living environment to your residents or visitors. Let's take a look specifically at Maintenance Care to see how that particular software helps in reducing risk and therefore saving an organization money.

1. Quicker Response Time

Maintenance Care's web-based maintenance request workflow allows for instant notification of all potential risks to be delivered automatically to one or multiple individuals. Quicker response time means minimizing potential further damages to incidents.
Example – Piping water leak
Quick response leads to minimal water damage resulting in less time and money spent replacing flooring, drywall and other affected areas. Quick response also leads to reducing the risk of a slip and fall incident from a resident or visitor creating a liability claim with escalating costs.
Potential savings on one incident - $1,500 Labor, $20,000+ Liability

2. Preventative Maintenance

Scheduling maintenance on equipment used by residents or visitors will help decrease frequency of potential problems causing harm. Maintenance Care reminds the required personnel to execute on the scheduled task and tracks the result of any repairs related to the equipment.
Example – Ceiling mounted lift
Proper regular maintenance identifies potential weaknesses and provides a digital paper trail for establishing standard of care.
Potential savings on one incident - $3,000 Replacement, $20,000+ Liability

3. Task Escalation

Maintenance Care allows for automated task escalation for those high-risk issues, making sure serious problems are never forgotten. The system can notify a manager or team member when a task has not been resolved within a specified period of time.

Example – Malfunctioning HVAC
Service contracts require contractors to periodically inspect and service equipment on a regular basis. Each time a service is performed on an item, the contractor usually submits a paper copy of the maintenance executed with any special notes of repair. In the case of a failing HVAC unit causing temperature spikes, Maintenance Care allows for proof of repair history and can point towards faulty workmanship by the contractor in question. Such documentation history, coupled with your due diligence of properly managing your vendors, allows for a more favorable result if such cases are taken to litigation by an injured party.
Potential savings on one incident - $5,000 Equipment Replacement, $10,000+ Liability

5. Web Hosted Software (Software-as-a-Service)
There are several other factors to consider when looking at whether or not your information will hold up to the scrutiny of the court system. Since Maintenance Care is fully web-based and hosts all of the information, your repair history, task response time, preventive maintenance schedule, each with its own date and time stamp, is tamper-proof. Unlike self-hosted software, you can't be accused of manipulating the data after the fact to suit your needs. It will be assumed that the information that was entered into Maintenance Care on the said date, was indeed performed and completed as stated.

Measuring Liability ROI
If you think a maintenance software is costly, consider how much it would cost if you had injuries in your facility. There are costs of: first aid/medical treatment, possible hospitalization, loss of staff or residents, loss of production, and ultimately possible prosecution and legal costs.

Accidents will happen; it's not a matter of if, but a matter of when. The best you can do for your organization is minimize your exposure to the frequency and scope of the incident(s).

CONCLUSION

As you have come to determine, calculating Return on Investment on something as complex as Maintenance Software isn't an exact science. One must be familiar with how each software solution can affect different divisions or departments within an organization. One must also be in a position to be able to quantify the effect to each division that the software solution will have, and compare it to the status quo.

Mathematically speaking, there is a hard-nose business case to be made for ROI on maintenance software solutions within improved productivity, preventive maintenance, equipment replacement and breakdown planning as well as liability and risk management protection.

The bottom line is that as a maintenance software get's implemented within your facility, it will immediately begin the process of cataloging your information in a way that starts to protect your interests. A computerized maintenance management system (CMMS) will bring you peace of mind of knowing that you are doing as much as possible to keep your guest and residents safe and keeping your maintenance staff productive. Now is there no better ROI than that?