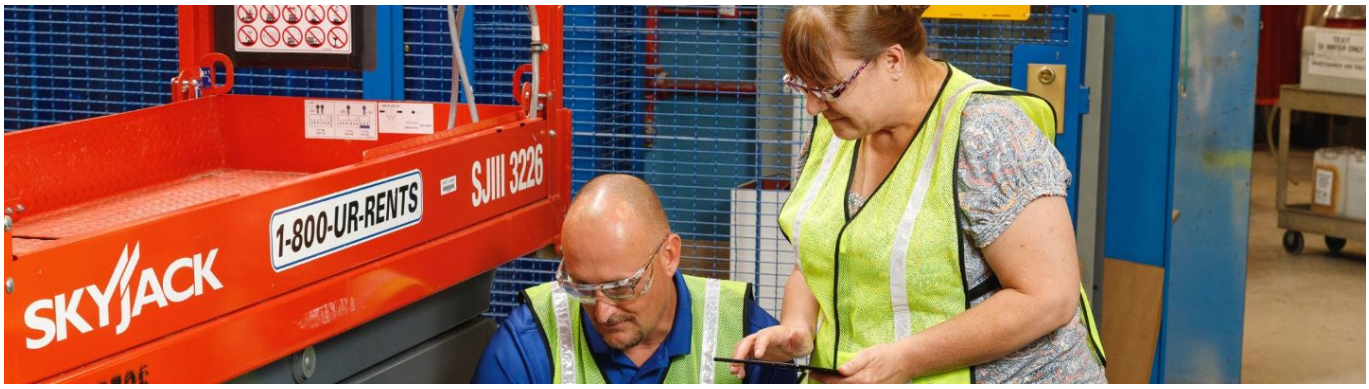

Facility Safety

Whitepaper: Using Technology to Streamline Facility Inspections

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This article focuses on web-based software that is used to schedule, track, and document equipment, location, and safety inspections. The software replaces manual, paper-based procedures with automated data collection solutions. This type of solution is most commonly used to assist companies in reducing expenses by establishing a regular routine for preventive maintenance checks. It also assists in complying with mandatory workplace safety regulations that ensure a secure physical environment.
Initiating a successful facility inspection process can be a daunting task. Based on the amount of equipment requiring inspection, the upfront effort in gathering data can be a time consuming undertaking.

A thorough process involves:

- Compiling a list of all equipment requiring inspection and documenting the inspection intervals for each.
- Verifying the location of equipment.
- Planning a logical inspection route that incorporates all equipment locations.
- Setting up a method for tracking inspection dates to ensure that inspections are not missed.
- Setting up a method for tracking discrepancies to ensure corrective action is taken.

Although initially time consuming, it is well worth the time invested to emerge with a process that is consistent, repeatable, and straightforward.

SCHEDULING,TRACKING, AND DOCUMENTING INSPECTIONS

Traditional facility and safety inspection processes are heavily paper-based. Automating the process can save time and money while increasing productivity, efficiency, and equipment life.

The diagrams above clearly shows a reduction in manual processes, but most software purchases require additional justification. Companies want to know why they should buy software and how it will save them money. This document is designed to provide information that will assist in substantiating the value of inspection management software for your organization.

CALCULATING ROI

Financial returns are typically not the primary reason for purchasing software that assists in tracking and documenting inspections, but the ability to show a cost savings will help justify project funding. Inspections are necessary to mitigate downtime on equipment, thus eliminating unnecessary expenses. Well documented safety inspections can also prove compliance with authorities having jurisdiction (AHJ) and assist in avoiding warnings or costly fines in the event of noncompliance. But does capturing inspection information electronically provide better, more valid results than performing inspections manually with a paper logsheet? Is there true value in electronic data capture? Most software purchases need some type of justification and an ROI analysis can provide a measure of substantiation or invalidation.

There are two types of costs associated with purchasing and implementing new software. The first is monetary cost and second is employee resources. An ROI can help validate whether or not an organization will realize both financial and resource savings. An ROI will also assist in maximizing the use of limited dollar resources. If a company's resources are constrained and multiple projects are competing for the same funds, an ROI can support the decision-making process.

Because of its basic simplicity, ROI is a very popular metric. There are many opinions and options on how to calculate ROI. The method used can involve factors like net present value and the time value of money. These in-depth ROI analyses are clearly valuable when evaluating software packages that have large price tags. Given that this example focuses on an economically priced web-based solution, sticking to basics will suffice. A simple calculation will measure the overall benefit of an investment, expressed as a percentage of the amount invested.

INSPECTION SOFTWARE CALCULATION COMPONENTS

Prior to calculating ROI it is important to determine relevant cost and benefit factors. There are hard costs which can be reasonably figured out and there are soft benefits that can be subjective and therefore harder to quantify. Hard cost are related to items such as number of inspections being performed, number of people performing inspections, and the salaries associated with those resources.

The soft benefits are intangible items such the value of eliminating missed inspections, always being audit-ready, and minimizing equipment downtime. Also keep in mind that some costs are onetime and others are reoccurring.

In determining hard costs for typical preventive maintenance or safety inspections, the following should be considered:

- The average number of inspections performed daily per inspector.
- The number of days per month spent performing inspections.
- The number of inspectors.
- The amount of time inspectors spends manually documenting information during each inspection.
- The average hourly wage of the inspectors.
- The amount of time spent doing manual data entry and filing for each inspection.
- The average hourly wage of employees performing data entry and filing.
- The amount of time spent compiling reports monthly.
- The average hourly wage of employees compiling reports.
- Documentation storage costs.

In determining soft benefits, consider the following:

- Faster completion of inspections.
- Elimination of paper log sheets.
- Mitigation of risk and liability.
- 100% accurate, certifiable inspections.
- Rapid detection of discrepancies.
- Elimination of missed inspections.
- Infrastructure savings.

COMPLIANCE SOFTWARE RETURN ON INVESTMENT (ROI)

ROI IN USE

The following example is based on an actual customer. It is a small company using web-based compliance software to conduct 1050 inspections per month on various items such as eye-wash stations, exit signs, chemical inventory, hazardous materials, laboratory equipment and lab safety. Only hard costs are calculated into the example.

Time Calculation Table (minutes converted to fraction of an hour)

1 minute = .0167	5 minutes = .083	Calculations are based upon reducing data
2 minutes = .033	10 minutes = .167	collection time by 50% and data entry time by 95%
3 minutes = .05	15 minutes = .25	when using InspectNTrack software.

	Manual Process	Using InspectNTrack Software
Manual Documentation		
Amount of time employees spend manually documenting information during each inspection	0.05	0.0250
Average hourly wage of employees completing inspections	$25.00	$25.00
Cost Per Inspection for manual documentation	**$1.25**	**$.63**
Data Entry & Filing		
Amount of time performing data entry and filing for each inspection	0.0830	0.0125
Average hourly wage of employees performing data entry and filing	$15.00	$15.00
Cost Per Inspection for data entry/filing	**$1.25**	**$0.19**
Total Cost of manual documentation and data entry/filing per inspection	**$2.50**	**$0.81**

	Manual Process	Using InspectNTrack Software
Inspections		
# of Inspections per day per inspector	35	35
# of Inspectors performing inspections	2	2
# of days per month inspections are performed	15	15
Total # of items inspected	1050	1050
Total cost of manual documentation and data entry/filing	$2619.75	$852.34
Inspection savings per month using InspectNTrack Software		**$1767.41**
Reports		
Amount of time spent compiling reports monthly	4.00	0.4
Average hourly wage of employees compiling reports	$25.00	$25.00
Cost of time spent compiling reports	$100.00	$10.00
Reporting savings per month using InspectNTrack Software		**$90.00**
Total savings per month using InspectNTrack Software		**$1857.41**
Estimated price of web-based system with 12-month subscription		**$4800.00**
InspectNTrack system investment returned in only 3.0 months		

$$\text{ROI} = \frac{\text{Return}}{\text{Investment}} = \frac{\text{(value of benefits)} - \text{(cost of benefits)}}{\text{Cost of benefits}}$$

$$\text{ROI} = \frac{(\$1857.41 \times 12 \text{ months}) - (\$4800)}{\$4800} = 3.64 \times 100 = 364\% \text{ ROI}$$

The ROI shows that the company's investment in inspection management software paid for itself in only three months, providing a 364% return on their investment. Note that web-based software was selected, which has a lower cost of entry than an on-premise software system. A larger company inspecting thousands of checkpoints would likely realize more substantial savings. Within larger companies, use of a web-based system also eliminates a portion of IT costs, which were not calculated in this example.

*Continue reading this whitepaper **here** to learn about other reasons to automate preventive maintenance and safety inspections.*