

# THE FUTURE OF MAINTENANCE MANAGEMENT



*ELEVEN TRENDS SHAPING YOUR WORKPLACE  
AND HOW YOU CAN PREPARE FOR THEM*

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## WHAT DOES THE FUTURE HOLD FOR *MAINTENANCE* MANAGERS?



**G**lobalization and related competitive pressures have resulted in rapid changes across just about every industry. Maintenance employees are feeling those changes in the workplace, both in the facilities environment and on the plant floor.

Most professionals in maintenance operations of all sizes have already experienced these industry changes firsthand, while others see them coming quickly down the pipeline.

Some organizations have embraced these changes, but others are floundering, in real danger of being left behind.



**MOST PROFESSIONALS IN MAINTENANCE OPERATIONS OF ALL SIZES HAVE ALREADY EXPERIENCED THESE INDUSTRY CHANGES FIRSTHAND, WHILE OTHERS SEE THEM COMING QUICKLY DOWN THE PIPELINE."**



## WHAT CAN YOU DO?

With the help of CMMS software, you can capture critical data for making good decisions to help your organization save time and money.

As a best practices “champion” who understands these trends, you can personally become the leader who keeps your organization at the top of its game.



**DIG DEEPER:**  
**CMMS LINGO: A BRIEF HISTORY**  
“CMMS”? “Web-based”? “Hosted”? “SaaS”?  
What does it all mean?

# ELEVEN *EMERGING* TRENDS IN MAINTENANCE MANAGEMENT



To some, this emerging environment might seem intimidating. For those who embrace these changes and work to stay ahead of the curve, though, these eleven trends offer a chance to gain competitive advantage.

- 1 Technology Adoption:** Computers, networks, and mobile devices are now in the hands of almost every employee—including the maintenance team.
- 2 Enter the Digital Native:** Older workers are retiring, and the younger “digital natives” coming onboard have a deeper understanding of technology and its capabilities.
- 3 Data-Driven Management:** Managers want the ability to back up decisions with hard data—requiring better tracking and reporting systems.





- 4 Mobile Technology:** Mobile technology is expanding rapidly, and the ability to connect from the field is a natural fit for maintenance operations.
- 5 Better, Faster, Cheaper:** CMMS software is now more affordable and easier to implement than ever, putting it within virtually every organization's reach.
- 6 The Cloud:** Increasing bandwidth and more affordable hosting options mean you don't need expensive hardware or a highly skilled internal IT team to access great software.
- 7 Systems Integration:** CMMS data now links easily with other systems, such as ERP and accounting software, predictive maintenance monitors, building automation systems, and more.

- 8 Insourcing vs. Outsourcing Analysis:** Increasingly, companies are saving money by focusing on their core competencies and leaving specialized tasks to outside vendors. CMMS tools can help you analyze which tasks, processes, or functions you should keep in-house and which you should consider outsourcing.
- 9 Sustainability and Environmental Impact:** More organizations are seeking LEED and other “green” certifications. They need reliable maintenance and facility data to achieve and maintain them.
- 10 Regulatory Compliance:** Regulatory bodies are requiring increasingly complex recordkeeping. Organizations that meet this challenge are saving millions in fines and liability lawsuits.
- 11 The Internet of Things:** The rapidly growing market for IoT devices creates an opportunity for maintenance managers to use that data to improve the efficiency of their maintenance operations.



***DIG DEEPER:***  
**LEARN HOW SUCCESSFUL MPULSE CUSTOMERS**  
**HAVE TRANSFORMED THEIR MAINTENANCE**  
**OPERATIONS WITH CMMS.**

## TREND #1: *TECHNOLOGY* ADOPTION



**D**espite the fact that maintenance management can be highly technical in nature, maintenance teams are often the last in an organization to get new information technology (IT) systems.

The maintenance department's typical workday includes highly technical and specialized tasks related to a broad range of advanced technologies. Until recently, though, information technology wasn't considered relevant for maintainers.

But the truth is information technology is just as important as any other tool in the maintenance team's toolbox.

The same IT systems that make other departments like finance and marketing more effective are also important for maintenance, repair, and operations (MRO) professionals.

Even today, as technology is rapidly integrated elsewhere in organizations, many maintenance departments are just now implementing PCs and related technology, like CMMS software.



**INFORMATION TECHNOLOGY IS JUST AS IMPORTANT AS ANY OTHER TOOL IN THE MAINTENANCE TEAM'S TOOLBOX."**



And often other forces hamper this process, like when the maintenance folks get hand-me-down computers after other departments get new ones, or when employees are forced to deal with limited, or nonexistent, network and Internet connections.



## ***HOW CMMS MAKES A DIFFERENCE***

CMMS software can serve as the central hub of your maintenance team, holding a vast amount of real-time data that can tell you what's really going on out there at any given moment.

This information helps your team focus on their workload in a productive way. And when your maintenance team is more productive, your whole organization benefits, including the bean counters.



### ***DIG DEEPER:*** **CMMS SUCCESS BASICS**

What are the basic things you need to understand and implement for a successful CMMS purchase and rollout?

## THREE MYTHS ABOUT MAINTENANCE AND TECHNOLOGY

What can you do to ensure your company's maintenance team gets the tools it needs? You can start by consciously eradicating these three myths in your own mind, then educating others in your organization.

### 1 Maintenance People Aren't Smart Enough

Most maintenance employees are highly technical; the first to be called to fix machines and systems that stump everyone else. So why are they perceived as incapable of using PCs and smartphones?

If your team maintains fleet vehicles, they are working with computers integrated into all aspects of the vehicles—including the engines, transmissions, air bag systems, and fuel systems. On the shop floor, equipment that once was manually controlled is now automated with process control systems.

Far from being not smart enough, the maintenance team usually comprises some of the most tech-savvy folks in the operation.



## 2 Technology is too complicated

This myth may have begun within the maintenance team itself. And it's true that at one point in time, integrating technology was a complicated process. But improved user interfaces have made it faster and easier for maintenance teams to get up and running with computers and other IT systems.

For example, gone are the days when you needed high-powered PCs and a complicated internal network to support CMMS software. Today it can be done with a tablet device and a WiFi connection. It's getting simpler all the time.

## 3 Computers are for Bean Counters

Technology adoption among organizations often filters down from the top, and usually the top includes more than a few "bean counters." Yet a computer isn't just for running numbers and analyzing company stock performance.

Technology adoption in the maintenance management field is growing because the expectations managers have of maintenance personnel are growing too. Today's maintenance team is expected to plan for preventive maintenance tasks and optimize asset life cycles.



**TECHNOLOGY ADOPTION IN THE MAINTENANCE MANAGEMENT FIELD IS GROWING BECAUSE THE EXPECTATIONS MANAGERS HAVE OF MAINTENANCE PERSONNEL ARE GROWING TOO."**



When something breaks, you can be sure maintenance is the first number people will call. So it's important to make sure your team members aren't the last on the IT department's list when it comes to purchasing software, computers, and mobile devices to help them manage their own workflow.

Letting go of old myths and advocating for your team's IT needs leads to good maintenance management and good financial management—two things that benefit your whole organization.



## ***DIG DEEPER:*** **FIVE WAYS CMMS CAN SAVE YOU MONEY**

Show me the money! Sure, CMMS will help you stay organized and on track. What you really want to know, though, is how it can save you money.

## TREND #2: ENTER THE *DIGITAL NATIVE*



**A** new breed of employees is beginning to enter the workforce, the “digital native” generation. And they’re no longer just joining Silicon Valley startups; they’re coming to a maintenance team near you.

They grew up surrounded by screens and fed by seemingly endless access to information, so digital natives have a whole new relationship to technology—and they might just be your new best friends.

Older employees can capitalize on the opportunities these younger “resources” present. It’s important to recognize their contributions to the workplace—skills that compliment and expand the maintenance team’s capabilities in a modern organization.



## WHY ARE DIGITAL NATIVES DIFFERENT?

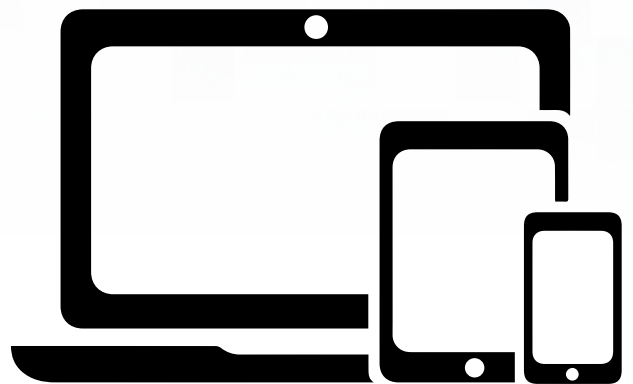
What makes these digital natives different? How will they change the way maintenance gets done? And how can you put their skills to use to get better results from your maintenance management program?

### Comfort Level with Technology

Because digital natives have spent their entire lives surrounded by everything from computers and videogames to MP3 players and cell phones, these employees have a greater understanding of technology and its capabilities.

Their devices are a key part of their personal lives, and this translates to their professional lives as well. As such, these workers will not only embrace new technology in the workplace, they will expect it.

While much of the resistance to new technology common in older generations is nonexistent with these team members, it is replaced by expectations that the company will keep its technology up-to-date in order for these workers to do their jobs.



**THESE WORKERS WILL NOT ONLY EMBRACE NEW TECHNOLOGY IN THE WORKPLACE, THEY WILL EXPECT IT. "**



## Communication and Collaboration

While older generations may pick up the phone or schedule an in-person meeting, younger workers may prefer virtual problem solving. From texting to videoconferencing to social networking, digital natives are familiar with and prefer other ways to communicate and collaborate.

This preference affects everything from daily tasks to performance reviews. For example, younger workers have grown up with constant feedback, and they may need regular communication from their coworkers and bosses. They also might conduct research differently—eschewing the traditional phone book for a quick Google search, for example.



## Scheduling and Multitasking

Early technology adoption among younger generations has enabled them to develop skills in multitasking, as they are used to surfing the Web while they talk on a cellphone and watch a program on television. This tendency affects their desire for variety in the workplace, and they may not like to stay too long on any one assignment.

Younger generations also prefer flexibility in their work schedules, so they may be more open to working outside of the typical 8-5 workday in exchange for time off to pursue leisure activities. This flexibility can work in your favor, if you are willing to be creative in scheduling work during your equipment and assets' downtime.

As a maintenance management leader, you have a unique position to harness the possibilities that digital natives can bring to your organization. By investing in these new employees, you can bring new methods and ideas to your workplace.

Leverage the technological experience and expectations of this new generation of workers to improve your team's processes, efficiency, and motivation. It can be a win-win situation for your organization and your employees.



**BY INVESTING IN THESE NEW EMPLOYEES, YOU CAN BRING NEW METHODS AND IDEAS TO YOUR WORKPLACE."**



## TREND #3: *DATA-DRIVEN* MANAGEMENT



**N**ot long ago most maintenance teams were primarily reactive organizations. The bulk of their day was spent answering phone calls and performing unplanned repairs. Making decisions on the fly meant sometimes prioritizing those repairs based on who was screaming the loudest.

Today, though, things are rapidly changing in the maintenance office. Smart, proactive maintenance managers are taking advantage of modern technologies to forecast, manage, and monitor maintenance activities.

They're using preventive and predictive maintenance tools and strategies to keep assets running and unplanned maintenance to a minimum. Their phones still ring, but it's not just incoming repair requests anymore. Often those calls are from senior managers, CFOs, COOs, and even CEOs who want detailed, accurate information from the maintenance department on what's impacting productivity, profitability, and corporate progress.

What's changed? It's called data-driven management, and it's a trend that's here to stay.



**SMART, PROACTIVE MAINTENANCE MANAGERS ARE TAKING ADVANTAGE OF MODERN TECHNOLOGIES TO FORECAST, MANAGE, AND MONITOR MAINTENANCE ACTIVITIES."**



## WHAT IS DATA-DRIVEN MANAGEMENT?

**“What gets measured gets done.”**

Data-driven management simply means making management decisions backed by reliable data. Technological advances continue to make more and more detailed, relevant data available. And with that increased capability comes increased opportunity to improve organizational performance at all levels, and in all departments.

Expectations, too, are rising. Managers from the front lines to the corporate headquarters have ever-growing expectations that the data they ask their employees for will be accurate, reliable, and readily available.

It's no different for managers in the maintenance world. They should expect more from their employees and systems, and they should be ready to answer more and tougher questions from above.



**YOU CAN MAKE DECISIONS BASED ON HARD EVIDENCE, INSTEAD OF PERCEPTIONS OR ASSUMPTIONS."**

## ***WHAT DOES THIS MEAN FOR MAINTENANCE MANAGERS?***

As a maintenance manager eager to stay ahead of the curve and adopt a more data-driven approach, you'll need to rely more and more on your CMMS software. You'll need to be sure your CMMS is set up to answer the questions that matter to you—and to your boss.

CMMS is best tool you have for gathering, analyzing, and reporting data about your equipment and your team. And by using that data, you can make decisions based on hard evidence, instead of perceptions or assumptions.



### ***DIG DEEPER :***

#### **MPULSE MAINTENANCE ADVISOR DASHBOARD**

The MPulse dashboard puts all your most important information front and center.



## WHAT DO WE HAVE TO GAIN?

The power of CMMS data lies in the questions you can now answer, both for your department and your organization as a whole. Is it more cost effective to repair that forklift or replace it? Should you hire another staff member to reduce overtime costs? What are our biggest repair parts expenditures?

Best of all, the cumulative nature of CMMS data means you can ask different questions in the future—ones you might not even think about today.



## **DIG DEEPER:** **WHAT ARE YOUR PAIN POINTS?**

What's driving you to search for CMMS software? Understand your pain better and use it to guide your search.

Furthermore, data-driven management allows maintenance teams to communicate their value and contributions to the organization as a whole. It's easy for upper management and other departments to see the value and efficiency of your team and their work when they can see the data—and the dollars—right in front of their eyes. You can use CMMS data to tell the story of your maintenance team's contributions to the organization.

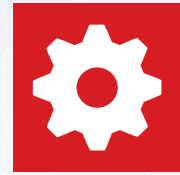


Together, CMMS software and data-driven management give you the picture you need to accurately assess how your department is functioning and where you might make changes to improve. With good data to work from, your organization can make good decisions, which will improve its ability to compete effectively and efficiently.



**IT'S EASY FOR UPPER MANAGEMENT AND OTHER DEPARTMENTS TO SEE THE VALUE AND EFFICIENCY OF YOUR TEAM AND THEIR WORK WHEN THEY CAN SEE THE DATA—AND THE DOLLARS—RIGHT IN FRONT OF THEIR EYES."**

## TREND #4: *MOBILE* TECHNOLOGY



**M**obile technology usage is growing rapidly across industries and organizations, and those of us in the maintenance, repair, and operations (MRO) profession are no exception. It'll come as no surprise to anyone who's spent time in a public setting that most Americans now own a smartphone. In fact, according to the Pew Research Center, 91% of American adults have a cell phone of some sort, and 56% of them have smartphones.

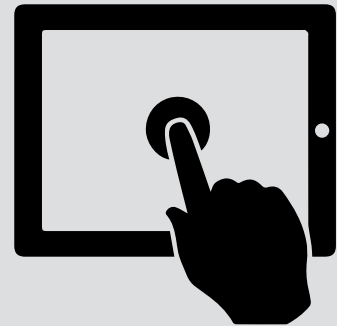
The growing market for smartphones may seem "old hat," though, compared to the latest and greatest device—the tablet. Pew reports it's one of the fastest growing new technologies today, with 42% of Americans older than 16 owning at least one. That's more than twice as many as 2012.



## MULTIPLE FUNCTIONS WITH ONE DEVICE

While smartphones and tablets started as consumer products, they're quickly transforming the business world. The flexibility of these devices has changed the way we work. Both run on the concept of "the app"—a mobile-enabled software program that allows one device to provide multiple functions. With apps, a smartphone is able to replace a host of other technologies:

- Cell phone
- Desktop or laptop computer (for many functions)
- GPS device
- Camera
- Gaming console
- Pager
- Video camera,
- And much more.



Tablets can do many of the same things as smartphones. And with their larger screen size, improved portability, and dead-simple ease of use, many people are beginning to use them exclusively instead of laptops.



**DIG DEEPER :**  
**THE MOBILE MAINTENANCE MANAGER**  
What can mobile technology do for your maintenance operation?



## ***INTUITIVE HARDWARE AND SOFTWARE***

Mobile device designers have focused heavily on improving ease of use, so it's likely your employees will need minimal training. Many will have already used smartphones and tablets in their personal lives, and increasingly standardized application interfaces mean that lessons learned navigating one app are easily transferrable to new ones. You only gain these benefits, though, if you choose devices that support the leading mobile operating systems.

According to research firm IDC, the two leaders, as of November 2013, were Google's Android OS (81% market share) and Apple's iOS (12.9%). Windows Phone adoption is growing, but far behind at 3.6% market share.

## ***IMPROVED BANDWIDTH, BETTER ACCESS***

The explosive growth of mobile technology is being matched by growing bandwidth and better access to it. You can now connect to the Internet, and virtually any business application, from almost anywhere, via WiFi or cellular connection. Improved security features also mean you can safely control access to your data, even when you aren't in the office.



## MORE USABLE MOBILITY

Mobile technology is a natural fit for maintainers. With smartphones and tablets, you can capture information on the spot—instead of jotting it down on paper to be input later. With hardened cases by companies like Otterbox, Griffin, and LifeProof, you can use devices in dirty, hazardous industrial environments. More choices of screen sizes, too, mean there are models that work well for larger hands—and older eyes.

Mobile devices allow you to access critical information easily without calling back to the office or getting “plugged in.”

Imagine your staff being able to do these activities from anywhere:

- Open, access, and complete work orders
- Send or upload photographs of failed components
- View available parts inventory
- Access historical data on assets
- Get up-to-the minute alerts and reports
- Update inventory using barcode scanning and online ordering systems
- Access maintenance and repair manuals
- Record locations automatically with a GPS-enabled device.



**MOBILE DEVICES ALLOW YOU TO ACCESS CRITICAL INFORMATION EASILY WITHOUT CALLING BACK TO THE OFFICE OR GETTING “PLUGGED IN.”**



## *WHAT CAN MOBILE TECHNOLOGY DO FOR YOU?*

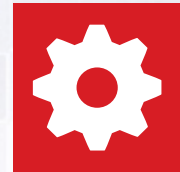
The potential of mobile technology is huge for maintenance professionals. Imagine one application that works wherever you need it to, whether it's on a desktop computer, a laptop, a smartphone, or a tablet. The combination of mobile devices with CMMS make for a powerful tool to help you get the job done where the maintenance actually happens.



### ***DIG DEEPER :*** **MPULSE MOBILEWORKS**

Powerful CMMS in the palm of your hand. Because you need MPulse where maintenance happens.

## TREND #5: BETTER, *FASTER*, CHEAPER



It's hard to imagine today, but as recently as 15 years ago, CMMS software was beyond the reach of most organizations. The challenges involved in implementing a CMMS were significant.

The software alone could cost as much as 100 times today's prices. Implementations involved teams of consultants spending weeks or months onsite, racking up huge professional services fees. And after all that money and effort, the features available paled in comparison to the power of modern CMMS applications.



Today, it's a very different world. Now CMMS is within reach of every company with maintenance operations, thanks to four major advances.



**NOW CMMS IS WITHIN REACH OF EVERY COMPANY WITH MAINTENANCE OPERATIONS."**

## **MORE POWER, LESS MONEY**

Remember floppy drives? Or the sound of a dial-up modem? While those technologies seem old-fashioned today, they were once top of the line. Computer technology grows more powerful—typically doubling every two years—and it gets cheaper over time.

This trend, also called Moore's Law, means more and more companies can afford to integrate high-end software and hardware into their operations, at every level.

What does this mean for you? Today's CMMS software is far more flexible and powerful, and it offers a great deal of bang for your buck.



### **DIG DEEPER :**

#### **MPULSE SOFTWARE OVERVIEW**

MPulse's Bronze, Silver, Gold, and Platinum editions provide the features you want for the results you need.



### **DIG DEEPER :**

#### **MPULSE MEANS BETTER BASICS**

MPulse entry-level editions, Bronze and Silver, have robust, powerful features others only offer in their premium packages.



## **LEASE OR BUY OPTIONS**

Once it was common to buy packaged software on disks to install on a computer. Updating required more disks, as well as the time and effort to install the update on the machine.

While that option is still available, it's not very common anymore. A more recent trend in software licensing is leasing, also called Software as a Service (SaaS), which allows users to pay a monthly fee in exchange for online access to hosted or "cloud-based" software.

SaaS greatly reduces the upfront cost, eliminates the need for local installation and upgrades, and makes it easier for companies to get up and running almost immediately.



### **DIG DEEPER :** **PURCHASE AND DEPLOYMENT OPTIONS**

Subscribe or purchase? Host locally or in the cloud?  
Understand your options

## **INCREASED COMPETITION**

Increased competition among CMMS vendors has benefited users. As the industry has matured, companies have continued to innovate to earn more customers and to compete effectively with their rivals.

The result of that increased competition has been consistent downward pressure on software pricing. That's good news for CMMS users, who now have numerous affordable, high-quality choices in the CMMS software market.

## **CLOUD TECHNOLOGY**

The use of cloud technology—"on-demand" software applications hosted on Internet-accessible servers—is perhaps the single most important recent change in the software industry. Because cloud computing allows companies to outsource application management and hosting, now even small organizations have access to enterprise-level services.

Cloud computing helps organizations get applications up and running faster (often immediately) while reducing onsite implementation and management costs. It virtually eliminates the need for highly skilled, expensive internal IT teams.

These changes have resulted in more options for maintenance management operations. Faster software implementations and reduced costs mean organizations of all sizes have the opportunity to use powerful, affordable, enterprise-class CMMS.



**NOW CMMS IS WITHIN REACH OF EVERY COMPANY WITH MAINTENANCE OPERATIONS."**

## TREND #6: THE *CLOUD*



**C**loud computing technology has revolutionized the CMMS software industry by helping organizations of all sizes achieve faster implementations, reduce internal IT needs, and improve reliability. Cloud computing also provides a broader range of payment options. Now it's easier than ever for companies to afford CMMS software for their maintenance teams.

Cloud computing applications—"on-demand" software hosted on Internet-accessible servers—have a long history with roots back in the 1950s, when enormous mainframe computer systems housed in large server rooms were accessible via simple terminals. In the 1990s, though, commercialization of the Internet made the concept feasible on a global level.

Today, the higher speeds and bandwidth capacity of the modern Internet have opened the door to cloud computing technology for businesses. It started out with simple web-based email solutions (like Yahoo! Mail or Google's Gmail), and now the technology has evolved into full-service software solutions accessible from any device with an Internet connection.

Cloud-based CMMS software is changing the maintenance management profession at all levels. Its impact is particularly significant, though, for small organizations better able to compete thanks to affordable, enterprise-level applications.

## ***SO WHAT CAN CLOUD COMPUTING DO FOR YOUR MAINTENANCE OPERATION?***

Many maintenance professionals are discovering these major advantages:

**Reduced IT spending:** Because cloud-based CMMS applications are located elsewhere, maintenance operations no longer need to enlist expensive (and often unavailable) IT support to set up and maintain technology infrastructure.

**Lower hardware costs:** Because a cloud-based CMMS runs on external servers, many organizations have discovered they spend less on heavy-duty hardware in the office, particularly on PCs and internal servers.







**Subscription-based pricing:** Also called Software as a Service (SaaS), software subscription payment plans allow organizations to streamline budgets by eliminating heavy upfront investment and spreading costs over time.

**Mobilization:** Mobile technology is a natural fit for the maintenance industry, and cloud-based CMMS means maintainers can access data anytime and anywhere with Internet-enabled devices, like laptops, smartphones, or tablets.



**SOFTWARE SUBSCRIPTION PAYMENT PLANS ALLOW ORGANIZATIONS TO STREAMLINE BUDGETS BY ELIMINATING HEAVY UPFRONT INVESTMENT AND SPREADING COSTS OVER TIME."**



**Lower training costs:** Improved web-based and app-based user interfaces that mimic popular personal-use applications can minimize the learning curve on hardware and software.

**Easy scalability:** Adding a new user? Expanding your reporting capabilities? Cloud-based CMMS software makes these changes easy, so you can keep up in a fast-changing environment.

**Data security:** No more worrying about hard drive failures or data-loss catastrophes. With a cloud-based CMMS system, your data is backed up and secured in a professionally managed environment.



**WITH A CLOUD-BASED CMMS SYSTEM, YOUR DATA IS BACKED UP AND SECURED IN A PROFESSIONALLY MANAGED ENVIRONMENT.”**



Cloud computing helps maintenance operations get applications up and running faster while reducing onsite implementation and management costs. By virtually eliminating the need for highly trained, expensive internal IT teams, the biggest skill barrier to implementing CMMS is removed.

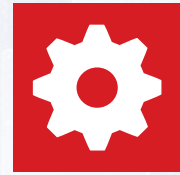
Your maintenance team will save time and money getting your CMMS system working—and you'll be able to get on to the real work of maintaining and repairing critical assets.



### **DIG DEEPER :**

**SOFTWARE AS A SERVICE (SAAS): ALWAYS THE BEST WAY TO BUY?** Is it always a good idea to rent software (also known as SaaS), or are there benefits to purchasing it outright? Learn the pros and cons.

## TREND #7: *SYSTEMS* INTEGRATION

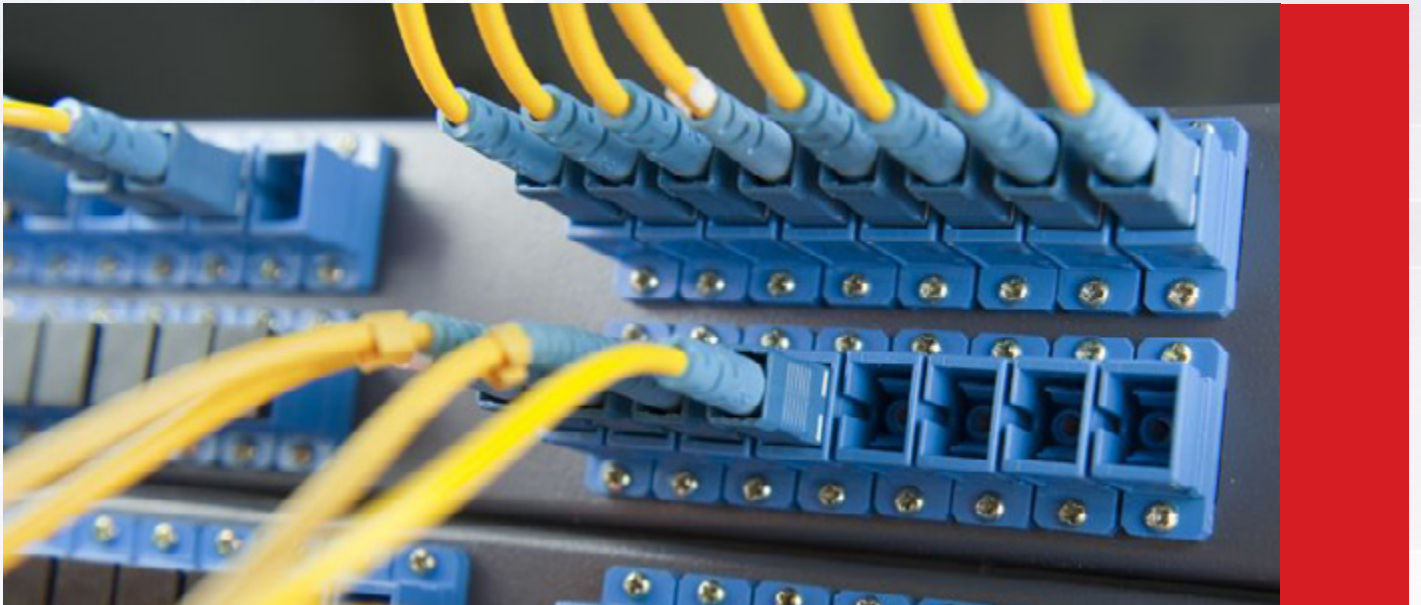


**A**n efficient and modern maintenance operation works best when its different technology systems communicate easily with each other.

Today, production machines and HVAC systems can feed information directly into your CMMS, helping you identify and resolve problems faster than ever before. In turn, your CMMS software can share data with accounting software and other company “systems of record.”

The term “systems integration” is shorthand for connecting different software applications so they can easily share information. The goal is to reduce tedious administrative work for your maintenance team, so they can focus on more important tasks.





Software systems integration has evolved over the past few decades. Back in the 1980s and early 1990s, business software ran on a computer sitting on a desktop, creating little islands of computing power spread out across the organization.

The 1990s connected these individual computers through powerful networks, which small businesses used for file sharing. Larger companies tapped their networks for massive, monolithic enterprise resource planning (ERP) systems.

ERP systems offered a variety of business functions in one package—including accounting, human resources, sales, planning, and inventory features—but they rarely served the needs of any business function except for accounting. They were designed with an accounting perspective in mind and often perform poorly as tools for managing other functions, like maintenance. They were also expensive, difficult to implement, and nearly impossible to integrate with applications from other vendors. The need to update or upgrade a system could bring the workflow of an entire organization to a halt.



Yet from these dark times, the computer software industry has emerged into a new era, where inexpensive networking technologies and improved “best practices” for software development have changed the way organizations integrate new solutions like CMMS software.

Back then, you needed a specialized consulting team and a few months to integrate CMMS software with your other important computer applications. Today—thanks to easy-to-use, off-the-shelf integration capabilities—it takes your IT team weeks and a reputable vendor just a few days.

This new world has opened up tremendous opportunity for maintenance managers who want to further automate their operations.



### ***DIG DEEPER :***

#### **CMMS INTEGRATION CAN BE EASY AS 1-2-3**

Integrating your CMMS with other applications used to be a pain. Find out how to do it easily and painlessly with this free guide.

Improved CMMS integration offers these benefits for maintenance organizations:

### **Focus on Maintenance Operations**

Modern CMMS solutions are designed with maintenance people in mind—for planning and managing maintenance and assets. If they easily share data with accounting and other applications, you get the best of both worlds: happy maintenance engineers with useable software, and happy bean counters with data they can use.

### **Compatibility with External Applications**

Maintenance managers can easily share maintenance data with their organization's systems of record. They don't need to worry about manually reformatting volumes of data just to satisfy the requirement of other systems.

### **Data Collection from Multiple Sources**

Improved integration with external data sources means CMMS software can collect data from building automation systems as well as from meters, PLCs, and gauges on the factory floor. In fact, a modern CMMS, properly integrated, can use data from virtually any source to feed its alerts, alarms, and reports.



### ***DIG DEEPER :***

#### **MPULSE DATALINK INTEGRATION TOOLS**

Learn how MPulse DataLink makes multi-system integration a snap without involving teams of expensive systems integration consultants.



Imagine a streamlined maintenance operation and simplified paperwork. This new era of systems integration offers maintenance operations managers the opportunity to improve communication and automate administrative duties.

Today's powerful CMMS software can make maintenance tasks more manageable for you and your organization—getting you up and running in a matter of days and at a far more affordable cost. That means your maintenance team can focus on what is really important—getting the job done.



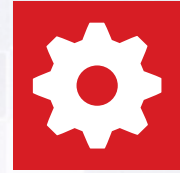
### ***DIG DEEPER :***

#### **WEBINAR: INTRODUCING MPULSE DATALINK**

Watch this detailed introduction to MPulse's DataLink Integration Tools and learn how to easily integrate your CMMS with other critical systems—accounting, PLCs and gauges, ERP systems.



## TREND #8: INSOURCING VS. *OUTSOURCING* ANALYSIS



**Y**our maintenance department is typically the “go-to” resource when something breaks. But what about when a repair is outside the scope of your team’s core skills? Your staff may be highly trained in maintaining industrial equipment on the shop floor, but is it cost effective to take time away from their regular duties to fix a broken HVAC system? Often it pays to outsource work to a specialist.

### *WHAT IS OUTSOURCING?*

Outsourcing is when a company obtains a service (or sometimes a product) from an outside supplier in place of an internal source. The term has some negative associations because it was used to describe companies who were using cheap offshore labor sources in other countries. But the truth is organizations outsource jobs all the time. Does your organization have office supplies delivered? Call an IT service to fix computer problems? Host its website? Clean employee uniforms? All of these are common examples of outsourcing.

The maintenance department is often faced with deciding the best way to get the job done. After all, it’s likely your team excels at fixing things, and maybe someone on your team has the reputation of being able to fix anything. So how do you know when it’s more efficient to outsource work than assign your internal staff to the task?



## HOW CMMS CAN HELP

Your CMMS software can help you determine the best use of your team's valuable time. You might hear this referred to as "decision support analysis." Because CMMS excels at using data to calculate the true cost of any maintenance task, you can determine when you should assign a team member to the job and when it's more efficient to call a specialist.

Returning to the HVAC repair example, a factory maintenance team is likely to have a great deal of training and experience with production equipment, while the HVAC system is unfamiliar. Even though your team may have the skills, it will likely take them longer to diagnose the problem. They'll have to spend more time researching the issue, plus the chances are greater they'll make a mistake or order the wrong parts. Now you have a staff member who's been unable to work on their regularly assigned tasks when you could have paid a specialist to fix it faster and cheaper.



**BECAUSE CMMS EXCELS AT USING DATA TO CALCULATE THE TRUE COST OF ANY MAINTENANCE TASK, YOU CAN DETERMINE WHEN YOU SHOULD ASSIGN A TEAM MEMBER TO THE JOB AND WHEN IT'S MORE EFFICIENT TO CALL A SPECIALIST."**



## ***DATA-DRIVEN DECISION MAKING***

The two major issues for determining when it's the right time for outsourcing are specialization and efficiency. With CMMS software, you know exactly how many hours your team members spend on any given task and the total cost of those repairs. You also know who is the most efficient at what jobs, and how many tasks need to be completed, and when. Using your CMMS data, you can make a solid decision based on hard facts.

Outsourcing benefits maintenance teams because it allows them to focus on their core competencies. Maintenance managers can outsource work wisely and use their internal resources more efficiently. Best of all, CMMS software provides data for backing up those decisions—helping your organization work more effectively and resourcefully.



**CMMS SOFTWARE PROVIDES DATA FOR BACKING UP THOSE DECISIONS—HELPING YOUR ORGANIZATION WORK MORE EFFECTIVELY AND RESOURCEFULLY.”**

## HOW CMMS SOFTWARE CAN HELP WITH OUTSOURCING ANALYSIS

CMMS data is the ideal solution to help you determine when it pays to outsource. You can use CMMS data to analyze:

- Cost comparisons between doing the job internally versus calling in a supplier
- Team member efficiency, including specialization and ability
- Overall work volume
- Staffing levels, flexibility, expertise, and work quality
- Available tools, equipment, and technology
- Typical response times



### **DIG DEEPER : CMMS BY THE NUMBERS**

Your CMMS is a treasure trove of valuable information. Learn how to use it to support your decisions and recommendations.

## TREND #9: *SUSTAINABILITY* AND ENVIRONMENTAL IMPACT



**S**ustainability. Going green. Earth friendly. Carbon footprint. Carbon neutral. You hear these buzzwords about the environment all the time, and you know your organization wants to reduce waste and save money. But what does this trend really mean for the maintenance team?

The maintenance department is often the focus of environmental policies because maintenance itself is a key part of sustainability, as it improves operations and contributes to longer asset life. After all, the best way to reduce waste is by preventing assets from becoming inefficient and from breaking too soon in the first place. So organizational sustainability policies have a big impact on how the maintenance team does their jobs.



Measuring environmental impact is about calculating what is saved instead of what was spent: fuel that wasn't burned, water that wasn't used, and waste that never happened. You know CMMS solutions can help you track what you've already done and what still needs to be done. But CMMS can also help you quantify how those tasks turn into savings—in time, money, and other resources.

CMMS can help you meet sustainability goals in six major ways.

### **1 Reduced Energy and Water Consumption**

CMMS can help your team collect and track data on water and energy usage. By recording gauge readings over a period of time, you can compare current to historical usage, calling attention to spikes, trends, or major changes. Such condition-based monitoring (CBM) allows you to automatically generate corrective work orders when assets become less efficient because they need maintenance.

### **2 Reduced Material Consumption and Waste**

You can reduce material waste by improving the tracking of purchase orders and inventory. Knowing exactly what you have on hand prevents over-ordering and stocking unneeded parts or materials. Not only do you prevent waste of inventory, but you also save the energy needed to transport and store unnecessary stock. Additionally, when you start using electronic records and mobile devices to track work orders and inventory management, you reduce the use of office supplies like paper and ink.



### 3 Optimized Equipment Lifecycle

Perhaps the simplest way CMMS contributes to sustainability goals is by efficiently scheduling and tracking preventive maintenance (PM) tasks on your critical assets. Your CMMS system notifies you in a timely manner when these services are due, so your team is on top of it. Staying current on your PM services helps your assets work better and more efficiently for longer—saving money and energy as well as reducing emissions along the way.

### 4 Certification Support

It's one thing to say your operations are sustainable; it's another to prove it through a certification process. The Leadership in Energy and Environmental Design (LEED) program for facility management, the ISO certification process for manufacturers, and other regional certification programs require organizations to show how their business processes are saving environmental resources. Hard data is the proof to obtain these certifications, and nothing does maintenance data better than CMMS.





## 5 Community Relations

Environmental policies affect more than just business operations. Proving your organization's good stewardship is an important part of community and public relations. With CMMS data to back up any environmental success stories, your organization can promote its environmental policies both internally and externally. In turn, recognition and promotion of an organization's efforts for sustainability can result in improving the organization's image and attracting new clientele.

## 6 Risk Management

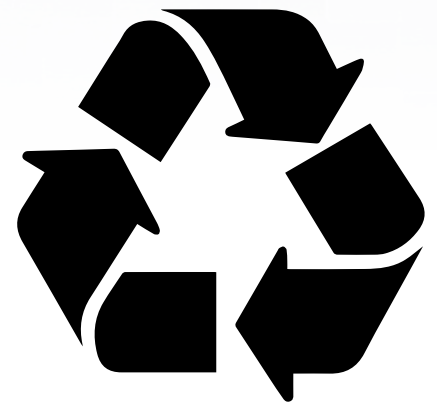
CMMS systems store critical safety instructions and enforce adherence to important industrial practices, preventing spills and other accidents dangerous to both people and the environment. Organizations are always looking for ways to minimize risk. Social responsibility is part of that equation. Strong environmental policies can minimize the potential for damage caused by the organization's actions—things like toxic spills, improper disposal methods, or destruction of natural resources.





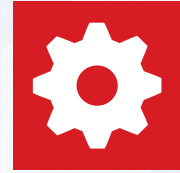
Your maintenance team can be a key proponent of improving energy efficiency and reducing your organization's carbon footprint, resulting in lower energy use and maintenance costs.

Best of all, your CMMS software can serve as a way to record and report on your team's efforts—making sure your hard work is documented. As a result, your organization can stay ahead of the environmental curve with a proactive approach to reduce waste, save energy, and improve operations.



**CMMS SOFTWARE CAN SERVE AS A WAY TO RECORD AND REPORT ON YOUR TEAM'S EFFORTS—MAKING SURE YOUR HARD WORK IS DOCUMENTED."**

## TREND #10: *REGULATORY COMPLIANCE*



**M**aintenance departments everywhere are struggling to meet the growing demands of government and industry standards and regulatory bodies. OSHA compliance. FDA guidelines. ISO certification. You name it. Every industry has its mountain of rules to climb.

And those mountains seem to be growing. You can't simply "pull the paperwork together" at the last minute anymore and hope to pass the scrutiny of an audit. These days you absolutely have to have a CMMS solution to track the details of your increasingly complex maintenance operation.





And good recordkeeping isn't just about working through red tape and passing audits. Those agencies and standards organizations track things for a reason.

The cost of poor tracking can be much higher than having to shuffle a little more paper. Consider the [2014 Elk River chemical spill](#), when “up to 7,500 gallons of crude MCHM leaked from a one-inch hole in the bottom of a stainless steel storage tank.” How would you like to be the maintenance manager at Freedom Industries, the company responsible for a chemical leak that contaminated the water supply of 300,000 people? That small hole sent the company into bankruptcy and cost the West Virginia economy about [\\$61 million](#), according to Marshall University researchers.

And what about the possibility the leak wasn't due to a preventable maintenance failure? Well, then the records become even more important to saving the company—and the maintenance manager's job.

CMMS provides a reliable central repository for your maintenance and safety data. With a properly implemented CMMS solution your organization can pass inspections and audits, and avoid fines. And you won't have to scramble last minute to set things in order.

CMMS helps maintenance teams stay organized and in compliance by...

- Tracking employee health and safety information.
- Documenting work procedures to make sure they are being followed.
- Keeping production equipment safe and reliable.
- Ensuring all safety inspections and tests are done properly and on schedule.
- Determining when it's time to repair or replace malfunctioning equipment.
- Documenting preventive maintenance on key assets.
- Creating reports for audits.
- Archiving work history.
- Storing employee trainings and certifications.
- Tracking incidents.





For regulatory agencies, if it's not documented, it didn't happen. With CMMS, you have a traceable history of completed maintenance tasks and documented policies to prove to external agencies that you're acting in accordance with their regulations.

Whether you need to report on equipment sanitation procedures for the USDA, or need to document safety standards for OSHA, CMMS software is the right solution to help you cope with the growing jungle of complex requirements. And the best thing is, once you get your CMMS set up correctly, documentation takes care of itself, so you can focus on other things—like maintenance.



### ***DIG DEEPER:*** **CMMS FOR A SAFER WORKPLACE**

Find out how CMMS can create and confirm a safer place to work. Keep your employees healthy and avoid unnecessary fines.

## TREND #11: THE *INTERNET* OF THINGS



**T**he Internet of Things (IoT) is creating a lot of buzz in the maintenance world, and we believe it will change the way maintenance professionals collect asset information and exchange data with other systems.

The IoT is a natural fit with the way maintenance teams operate—collecting data faster and easier than ever before. Best of all, maintenance teams can use that information to proactively perform maintenance and even predict asset failures.

Many maintenance teams already collect data in a similar way by recording the output of meters and gauges, although we call it Condition-Based Maintenance. The rapidly growing market for IoT devices creates an opportunity for maintenance managers to use that data to improve the efficiency of their maintenance operations.



## WHAT IS THE IoT?

Sometimes called the Industrial Internet of Things (IIoT) or machine-to-machine (M2M) communications in the industrial world, this term describes systems that gather information directly from multiple devices, which can be almost anything with a sensor—including computers, vehicles, smartphones, appliances, building automation systems, and production equipment.

## HOW DOES THE IoT AFFECT ME?

As technology becomes less expensive, while also getting more powerful, an explosion of IoT devices is set to flood the marketplace. Approximately 26 billion connected devices will be in place by 2020, according to Gartner, an increase of 30-fold over 2009. These aren't just new devices either—IoT technology can also gather data from existing gauges, meters, and PLCs on your current assets.

So what does this mean for maintenance professionals? It means more data—a lot more data—and more data in real time. And more real-time data means better insights into your assets, how they're working, and what they're really costing you.



**THE “INTERNET OF THINGS” IS PERHAPS A MISNOMER, BECAUSE THE INTERNET ISN’T EVEN NECESSARY; THESE DEVICES TYPICALLY SEND DATA TO OTHER DEVICES VIA A WIRELESS NETWORK CONNECTION OR THE WIRED LOCAL AREA NETWORK (LAN).”**

## **THE POWERFUL COMBINATION OF THE IoT AND CMMS**

The true power of the IoT isn't actually in the sensors and devices themselves. It's the software that stores and processes their data that makes the difference. CMMS software helps you make sense of what to do with the data gathered by these devices, telling you take action when the time is right.

When an asset's condition changes, your CMMS lets you know so your team can react to any problems immediately—improving the reliability of your assets while also reducing risk and saving money. And just think how impressed people will be when you respond to a problem they haven't even told you about.

CMMS helps maintenance professionals...

- monitor multiple meters (e.g., revolutions, psi, hours) on a single asset
- specify multiple conditions, triggers, and responses
- automate work order generation based on specified triggers
- identify potential problems with data analysis tools





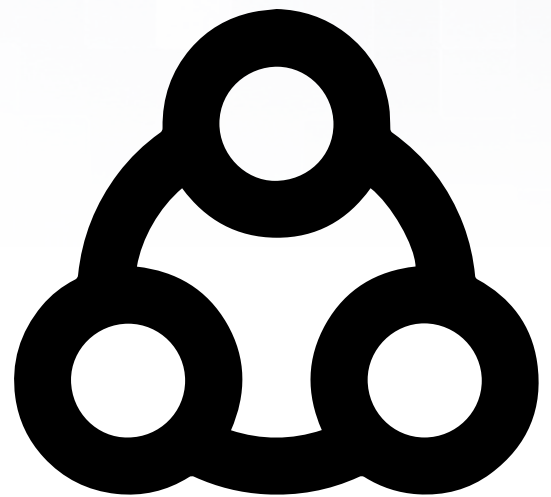
## THE IoT AND BIG DATA

With the IoT, big data becomes even bigger. The key is finding a way to use that data to manage your maintenance operations. The combination of the IoT and CMMS can improve the way maintenance professionals monitor and control assets. The long-term goals of the IoT and CMMS technology are improved efficiency, better customer service, and enhanced safety.

## THE FUTURE IS HERE

Some maintenance operations are already using the IoT and CMMS. Products like MPulse DataLink Integration Adapter let you quickly and easily move your Condition-Based Maintenance data in and out of MPulse CMMS software. It's an easy way to start getting real-time data from your assets, while reducing manual collection and logging.

Don't be fooled by the latest tech lingo. For maintenance professionals, the "Internet of Things" simply means listening to what your assets are trying to tell you—and using the power of CMMS to make informed decisions about the best way to maintain them.



**WITH THE IOT, BIG DATA BECOMES EVEN BIGGER. THE KEY IS FINDING A WAY TO USE THAT DATA TO MANAGE YOUR MAINTENANCE OPERATIONS."**

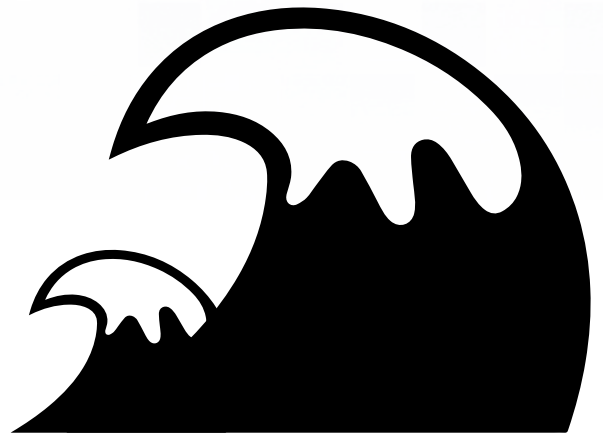
## RIDING THE *WAVE* OF CHANGE



**T**hroughout this series you've learned how the maintenance management world is changing. New technologies, shifting work habits, higher expectations, and stricter regulatory compliance are converging to dramatically change your workplace.

It's your choice whether to ride this wave or get swept away by it.

Right now, you have a chance to gain an edge, to get ahead of the wave. You have the information you need to see what's coming. But the real question is, "What are you gonna do about it?"



### ***DIG DEEPER :***

#### **10 STEPS TO A SUCCESSFUL CMMS IMPLEMENTATION**

Follow these 10 steps to make your CMMS implementation an unqualified success.

## **WHERE SHOULD YOU START? BEGIN BY ASKING THESE THREE QUESTIONS.**

### **How will the coming changes impact our organization?**

Consider each of the 11 areas we've explored. How do they relate to the way your company does business? Are you already engaged in activities that prepare you to meet these changes head on? Or are you behind the curve?

### **Which changes are likely to have largest impact?**

Try to prioritize trends and drivers that are likely to have the biggest impact on your organization. Are there some that promise to deliver added efficiencies and cost savings? Are there others that pose a threat? Strive to understand which is which.

### **What resources and plans will I need to successfully navigate these new waters?**

Knowing where the threats and opportunities lie is only half the battle. As you move into new budget years and planning cycles, begin to transition your activities to align with the changes. Prioritize getting the technology, training, and personnel that are going to make you successful in the new environment, and phase out old ways of doing things that will put a drag on your ability to adapt.



**PRIORITIZE GETTING THE TECHNOLOGY, TRAINING, AND PERSONNEL THAT ARE GOING TO MAKE YOU SUCCESSFUL IN THE NEW ENVIRONMENT, AND PHASE OUT OLD WAYS OF DOING THINGS THAT WILL PUT A DRAG ON YOUR ABILITY TO ADAPT."**



**BY BEING PROACTIVE, YOU HAVE THE OPPORTUNITY TO BECOME THE LEADER WHO KEEPS YOUR ORGANIZATION AT THE TOP OF ITS GAME, EVEN AS THE WORLD CHANGES AROUND IT. "**

Using CMMS software and related technologies, you can manage this rising tide of complexity and help your organization gain a competitive advantage, improving efficiencies, extending the life of your assets, and reducing costs.

By being proactive, you have the opportunity to become the leader who keeps your organization at the top of its game, even as the world changes around it.



### ***DIG DEEPER :***

**KNOW YOUR STAKEHOLDERS: WHO TO INCLUDE IN THE SOFTWARE BUYING PROCESS** It's important to know all the people who can make or break your CMMS implementation. Learn how to satisfy them all.

## WHAT'S THE *NEXT* STEP?



### *NEED HELP GETTING STARTED?*

**Contact us to learn more.**

**Call: (800) 944-1796 USA and Canada.**

**+1 (541) 302-6677 Outside of USA and Canada.**



The journey of a thousand miles begins with one step, and the journey to better maintenance management begins with a simple phone call.

Now is the time to think big. Good maintenance managers know that plans are fluid, and they need to adapt to changes in their field. The future of maintenance management is coming, whether you are ready or not. Stay ahead of the game and ride this exciting wave to position yourself and your company for success.



### *DIG DEEPER :*

#### **WHAT TO LOOK FOR IN MAINTENANCE MANAGEMENT SOFTWARE**

Understand the basic and advanced features of contemporary maintenance management software to guide your search.