Transitioning from Pen and Paper to a CMMS



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Introduction

For decades, traditional pen-and-paper systems were the de facto standard for record-keeping in maintenance operations. Companies relied on manually recording data and decentralized data management was just the way things were. But as industries evolve and technological advancements surge forward, streamlined, automated processes have grown in popularity—and for good reason, which will be detailed throughout this ebook. Computerized Maintenance Management Systems (CMMS) are the culmination of this evolution, as they revolutionize the way maintenance tasks are planned, executed, and tracked. And companies adopting this technology experience significant cost savings.

Overview of Traditional Pen and Paper Maintenance Systems

Manually documenting maintenance activities, equipment inspections, and repair histories using physical logbooks, spreadsheets, or paper forms poses numerous challenges, including:

- Records prone to errors, inconsistencies, and illegibility, which can create inaccuracies and put companies at risk of quality and compliance issues.
- Organizing historical data or tracking equipment performance is unnecessarily time-intensive, creating delays and inefficiencies that can impact important decision-making processes.
- Creating fragmented data silos that hinder collaboration and make capturing a comprehensive view of operations impossible.

Why, then, is this still the option of choice for many? There are several reasons, including familiarity, perceived cost constraints, and a general apprehension about adopting new technology.

However, as competitive pressures intensify and regulatory requirements become more stringent, the shortcomings of pen-and-paper systems become untenable, necessitating a paradigm shift toward modern solutions.



The Limitations of Pen and Paper Systems

Paper records are inherently inefficient and time-consuming. Whether recording equipment inspections or documenting repair activities, each task that requires manual documentation is repetitive, redundant, and inefficient. Not only does it consume valuable resources, but it also detracts from productive activities, contributing to operational delays and increased downtime.

There are also errors to contend with. The human element introduces a heightened risk of mistakes and data loss thanks to illegible handwriting, transcription inaccuracies, and misplaced documents. These challenges compromise the integrity of maintenance records. And the reliance on physical documentation leaves data vulnerable to damage, theft, or loss, further exacerbating the potential for costly mistakes and compliance breaches.

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Tracking and analyzing maintenance data is also complicated. This presents a significant challenge for regulatory compliance, as retrieving historical maintenance records or compiling documentation for audits results in delays and inaccuracies. Without centralized data management and reporting capabilities, organizations struggle to maintain transparency, accountability, and regulatory adherence.

And it becomes next to impossible to take a proactive approach to maintenance management because pen-and-paper systems offer limited support for scheduling and executing preventive maintenance tasks. They lack automated reminders, notifications, and scheduling functionalities that are key to proactively managing maintenance activities. The focus shifts from mitigating risk and prolonging asset lifespan to taking reactive, costly action to repair equipment when it inevitably breaks down. The benefits of adopting a CMMS are clear.

Introduction to Computerized Maintenance Management Systems (CMMS)

Computerized Maintenance Management Systems (CMMS) emerged in response to the shortcomings detailed above. It's a transformative choice. A CMMS is software that's designed to simplify the maintenance and management of assets. It creates a centralized database to store and streamline information about assets, work orders, and maintenance history.

It's designed to digitize and centralize information, offering a comprehensive platform for managing assets, scheduling maintenance tasks, tracking work orders, and analyzing performance metrics. By digitizing these records, CMMS streamlines data entry, minimizes errors, and ensures the integrity and accessibility of information across the organization.

A CMMS organizes the information and automates preventive maintenance with alert notifications, electronic signatures, audits, and more. It acts as a central repository that is accessible from anywhere and offers a comprehensive overview of all assets, maintenance history, upcoming preventive maintenance tasks, and any ongoing work orders.

This centralized approach not only saves time but also ensures that no asset or associated activity is overlooked or neglected. Sifting through files to track down historical data to perform a root cause analysis, for example, is made possible without many hours of research—and that's just the tip of the advantages it offers over pen and paper systems.



A highly configurable CMMS displays information that is relevant to each individual user and greatly simplifies reporting and documentation tasks.

The Benefits of Adopting a CMMS

CMMS technology has a transformative impact on operational efficiency, compliance, and cost-effectiveness. When companies are small, paper processes may suffice, but as they grow, companies need to have a more scalable maintenance solution that can keep up with their growth. A CMMS enables this with its ability to:

Enhance data accuracy and accessibility.

A CMMS digitizes maintenance records and centralizes data storage. By doing so, it also eliminates the risk of manual errors and ensures the integrity of information. Realtime access to maintenance data enables informed decision-making and collaboration across departments.

Improve maintenance scheduling and preventive maintenance.

With automated scheduling functionalities and built-in reminders, CMMS streamlines planning and executing maintenance tasks. This minimizes downtime, prolongs equipment's lifespan, and reduces the likelihood of unplanned failures and associated costs.

Provide real-time tracking of maintenance activities and asset performance.

Real-time tracking offers insight into equipment health. Customizable dashboards and reporting tools allow stakeholders to monitor maintenance KPIs, track work order status, and identify areas for improvement. It's a level of visibility that enables proactive decision-making, timely interventions, and continuous optimization of maintenance operations.

Optimize maintenance operations to reduce costs.

A CMMS creates significant cost savings thanks to its preventive maintenance scheduling, efficient resource allocation, and optimized inventory management. It helps companies to strategically prioritize investments and identify cost-saving opportunities.

Better compliance with regulatory standards.

A CMMS makes it simple to have centralized documentation, track regulatory deadlines, and generate audit trails. By maintaining comprehensive records and automating compliance-related tasks, CMMS helps organizations demonstrate adherence to regulatory standards and to mitigate compliance risks.

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Planning the Transition to a CMMS

So, now it's time to transition to a CMMS-and that requires forward planning.

Transitioning from pen and paper to a CMMS can be a daunting task but can be simplified by breaking it down into five common steps:

- 1. Outline your goals.
- 2. Conduct a needs assessment.
- 3. Choose the right CMMS for your organization.
- 4. Prepare your team for the transition.
- 5. Migrate the data.

Outline your goals.

What do you hope to accomplish with your CMMS? You may seek to reduce costs, decrease equipment downtime, improve MRO inventory management, or eliminate recurring administrative burdens. Your goals will guide you toward the right features.

Conduct a needs assessment.

Conduct a comprehensive needs assessment with key stakeholders from maintenance, operations, IT, and compliance departments to identify organizational requirements, pain points, and objectives to help flesh out and validate your overarching goals. You'll want to gather insight about current workflows, challenges, and desired outcomes. And you'll need to understand any complexities, priorities and unique regulatory requirements each area is facing.

And finally, having a clear and realistic budget is important as you move to step three.

Choose the right CMMS for your organization.

Evaluate options based on functionality, scalability, ease of use, vendor reputation, and support services. Engage with CMMS vendors to request a demo of their system. Seek recommendations from industry peers to make an informed decision, as you'll want something intuitive and user friendly, but also offers technical support when needed.

Prepare your team for the transition.

The transition involves more than just adopting new software—it requires a cultural and mindset shift within your organization. You need comprehensive training and a plan to foster buy-in from stakeholders at all levels.

Empower employees and enlist the help of an implementation team drawn from relevant maintenance stakeholders within the company. This should be a small team of detail-oriented staff and managers tasked with providing consistent guidance.

This team needs to help communicate the benefits of adopting a CMMS, address concerns, and emphasize the importance of embracing change to drive operational efficiency and competitiveness. Be ready to demonstrate how it will make their jobs easier, accompanied by real-time demos that engage users in a genuine, human way.

Migrate the data.

Ensure the accurate transfer of historical maintenance records, asset information, and relevant documentation. Start by auditing existing data to identify inconsistencies, duplicates, and data quality issues.

Establish clear data migration goals, timelines, and responsibilities, and leverage data cleansing tools and techniques to ensure data accuracy and integrity. Collaborate closely with your CMMS vendor to develop customized migration workflows and mitigate potential challenges during the data migration process.

Meticulously planning each phase of the transition process—from needs assessment to data migration—will position your organization for success in the implementation phase..



Implementing a CMMS

You need a plan that details who is on your implementation team and the specific tasks that each is responsible for completing, along with key milestones for benchmarking at regular intervals. You should also have an outline detailing how the data will be gathered, classified and organized. Without a clear-cut plan, implementation will likely fail to meet your expectations, so creating a robust plan is critical to project success.

By working closely with your vendor and implementation team, you can configure and customize the CMMS to align with your organization's specific workflows. Together, you'll configure system settings, user roles, permissions, and maintenance workflows. You'll also want to configure data fields, asset hierarchies, and preventive maintenance schedules to reflect your organization's unique requirements.

Guided data entry and migration are crucial for accurately transferring historical maintenance records, asset information, and documentation into the CMMS. Your vendor should facilitate this for you and ensure data accuracy and integrity throughout the migration process.

Ensure you have standardized data entry procedures, and consistent codes for parts, features, failure modes, and assets.

Empower your staff with comprehensive training tailored to different user roles and skill levels within your organization. Hands-on training sessions, workshops, and online tutorials should be provided to familiarize users with the user interface, functionalities, and best practices. A consistent process can avoid confusion and errors later on.



Training sessions should emphasize the importance of data accuracy, compliance adherence, and proactive maintenance strategies. Ongoing learning and professional development opportunities should be incentivized to keep the technology in use.

An investment in staff training and development fosters a culture of continuous improvement and ongoing innovation within your organization. And this helps maintain data quality over time.

Also, successful software deployments require planning. Those rushing in risk failure, as these statistics attest:

25% of technology projects fail outright. – Forbes

50%+

More than half of all professional service projects are delivered past the deadline or over budget. – Wellingtone

14% of IT projects are failures. – CIO Magazine

30% of application deployments fail. – Wired Magazine

70% of digital transformations fail. – McKinsey & Company

Best Practices for Using a CMMS

Beyond ongoing professional development for staff, effective CMMS adoption requires ongoing commitment, engagement, and optimization. Foster a culture of adoption by communicating the CMMS's benefits, soliciting feedback from users, and addressing any concerns or challenges they may encounter.

Recognize and reward employees demonstrating proficiency and innovation in using the CMMS, fostering a sense of ownership and pride in maintenance processes.

When implemented correctly, your CMMS data will drive informed decision-making and continuous improvement initiatives. Analysis of maintenance performance metrics, asset utilization rates, and compliance trends will lead to the identification of areas for optimization and efficiency gains.

Monitoring will help you anticipate equipment failures and prioritize preventive maintenance activities. The cross-functional collaboration it offers will accelerate strategic planning, budgeting, and resource allocation processes. CMMS data is a powerful insight capability that should impact decision-making on all fronts. It can optimize maintenance operations, reduce costs, and enhance asset reliability over time.



CMMS offer extensive libraries of pre-built and customizable reports for total program visibility. Image shows an example dashboard from CERDAAC.

Case Study: Myriad Genetics

This FDA-regulated genetic testing and precision medicine company used a CMMS to track and manage medical device equipment and quickly began optimizing their maintenance processes, resulting in a 235% first-year ROI.

Myriad develops genetic tests that assess and guide treatment decisions that can significantly improve patient care and lower healthcare costs. When Wayne Findlay joined the company, they were using a combination of paper and a legacy Quality Management Software (QMS) system to track and manage preventive maintenance services for the company's manufacturing assets: including robot platforms, liquid handlers, centrifuges, pipettes, and more.

But there was a problem: "We couldn't find things easily, and we were not able to upload documents to the system or update them later," says Findlay. We would have to keep a paper trail and keep paper files of all those documents filled out correctly and kept updated."

Preventative maintenance services weren't happening when they needed to and were ultimately impacting production schedules. They required a change, quickly, that offered:

- Easy upload of all asset-related documents so the team could move away from paper.
- Accessible by multiple users at different labs and sites around the country.
- User-friendly interface to minimize training and onboarding time.
- Easy access and visibility of asset-related documents, service histories, notifications and more.

CERDAAC fit the bill and was implemented within weeks. It's accessed regularly by over 400 users across four different sites located in Utah, California, and Ohio.

- Preventative Maintenance (PM) workflows exist in a simpler, streamlined system.
- All four labs and the research facility are aligned in a unified program offering a single source of truth.
- There's an auditable service history for all equipment with records and documentation that are easy to find.

- Production delays are avoided as instruments are no longer past due for calibration or PM.
- There's better forecasting to strategically schedule PMs so production is not impacted.
- They've avoided audit findings and maintained compliance with the College of American Pathologists (CAP) and the Clinical Laboratory Improvement Amendments (CLIA).

We use it every day to check the Preventative Maintenance (PM) status of equipment. With CERDAAC, we can see what services have been completed, and what needs to be done in just a few minutes." – Wayne Findlay

"We use it every day to check the PM status of equipment. With CERDAAC, we can see what services have been completed, and what needs to be done in just a few minutes. No more chasing paper. And when we have an auditor ask when a PM for a specific asset was performed, and that auditor wants to see the document, we can pull up the answers right away in CERDAAC," says Findlay, "With the auditor satisfied with the information, they can continue with the audit. That has been a huge benefit." You can read the entire case study and others on the CERDAAC website.

Conclusion

Modernizing maintenance practices with CMMS software is inevitable. It promises to streamline maintenance processes, enhance data accuracy and accessibility, and facilitate proactive decision-making. It is also set to entirely shift the way maintenance operations are conducted today.

Technology is a catalyst for improved maintenance operations. The challenges and limitations of traditional pen-and-paper systems are no match for a CMMS's transformative capabilities. By investing in CMMS implementation, training, and ongoing optimization, organizations can drive operational excellence, enhance compliance, and gain a competitive edge in the marketplace.

Here are some tips to keep moving forward after implementation:

- Regularly monitor and evaluate the performance of your CMMS to ensure that it continues to meet the evolving needs of your organization.
- Establish key performance indicators (KPIs) for your CMMS related to system uptime, user satisfaction, data accuracy, and compliance adherence.
- Conduct periodic system audits to identify any issues or areas for improvement, such as outdated processes, unused features, or data quality issues.
- Solicit feedback from users and stakeholders to assess their satisfaction with the CMMS and identify opportunities for growth.
- Update and optimize system configurations, workflows, and training programs based on feedback and performance metrics to maximize the value of the CMMS investment.

By embracing these best practices and fostering a culture of continuous improvement, organizations can fully leverage a CMMS's capabilities to drive maintenance excellence and competitive advantage in manufacturing environments. The journey from pen and paper to a CMMS is not merely a technological upgrade—it's a strategic imperative. By embracing this digital transition and harnessing the power of CMMS, organizations can pave the way for a future of streamlined maintenance operations, optimized asset performance, and sustainable business success.

If you're ready to start this journey, reach out for a demo!

CERDAAC

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CERDAAC is a leading computerized maintenance management system that delivers operations excellence and automates and coordinates calibration, maintenance, validations, and more to ensure compliance with efficiency and no downtime.

CERDAAC is purpose-built for highly regulated manufacturers who need to deliver high quality products and profits while meeting complex regulatory requirements.

Trusted by over 3,000 companies worldwide including Abbott, Corning, Siemens, Varian, and Stryker and many more. Learn more at www.cerdaac.com