



# User Experience is Critical to Asset Management

**Matt Walther, Asset Management & Technology Development Manager,  
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*Improve productivity by 50 percent by focusing on better processes, data transparency, and more effective tools to collect and analyze data.*

Most utility companies have a 'state-of-the-art' Enterprise Asset Management (EAM) System to manage and maintain their equipment. However, collecting and analyzing good data can be challenging, hindering efforts to improve maintenance programs. Con Edison took a hard look at our practices, improved our processes, data transparency, and the tools we used to collect, analyze, and share data. We are getting better results and more productivity.

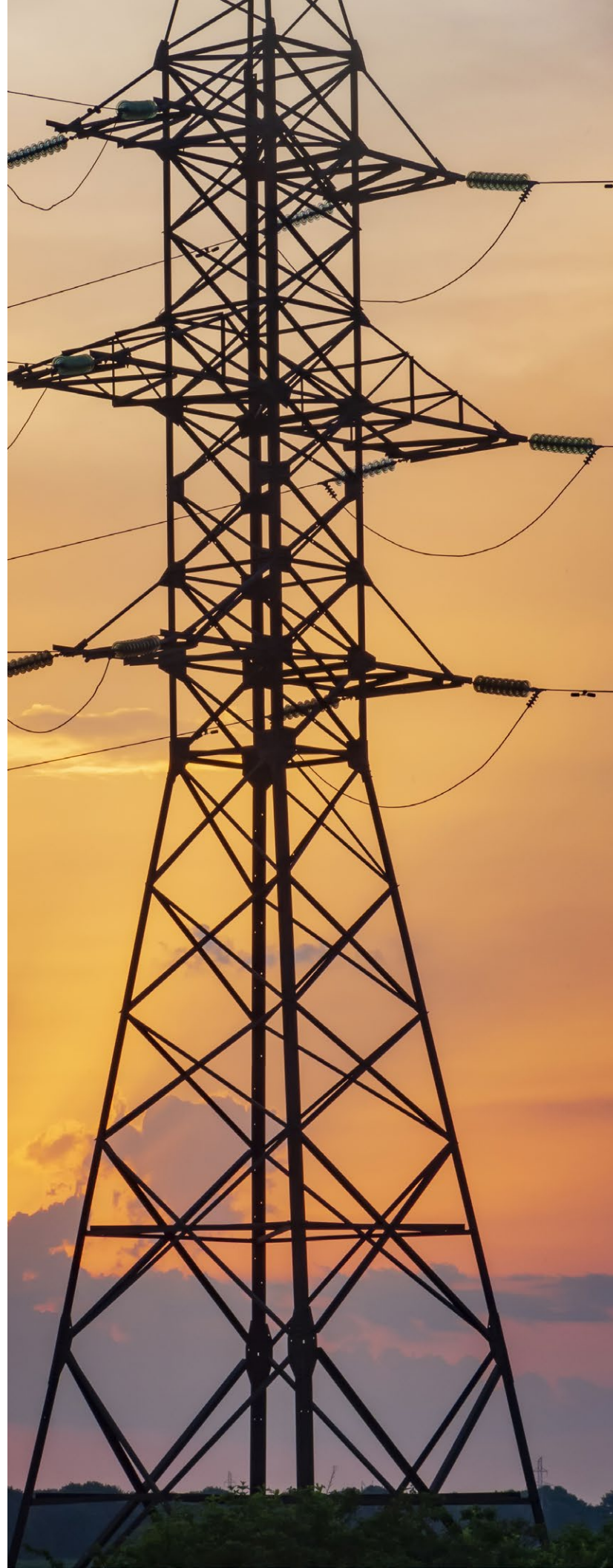


# The Obstacle to Getting Good Data

To get the most value from technology investments, a company needs its users to be fully engaged with the tools they have.. A poor user interface discourages engagement, making it difficult to get good data in and out of software systems. When the user experience is poor, it is challenging to get even those users who are in the system every day to use it effectively, let alone expand the user base to create a more well-informed organization.

A poor user interface can harm the performance in each of the three primary EAM categories – Operations, Maintenance and Engineering. The problem compounds as users struggle to first get data into the system and then pull it back out for decision making.

Operations and Maintenance personnel interact with the EAM system to identify equipment problems, enter inspection information, and document work their company performs on equipment. Since they are closest to the equipment, they can provide the most valuable information on the effectiveness of a maintenance program. They also spend most of their time in the field (which is where we want them to be), so it is critical to provide a user interface that makes data entry quick and easy. A poor user interface reduces productivity and data entry tasks cause frustration. This lowers engagement in the process.



Some common issues symptomatic of a bad user interface include:

- Users not entering information because they are frustrated by the complexity or inefficiency of the EAM system;
- Users entering incorrect information related to the equipment or the work performed;
- Users entering minimal or incomplete information that is of little value for trending or analysis.

Engineering typically enters equipment information and maintenance requirements and extracts information for continuous maintenance improvement. These individuals are further removed from the equipment and must rely on Operations and Maintenance data to make effective decisions. The user interface to extract the data can be difficult to use as well. This causes engineering to mistrust the system – is the data bad, or do I just not know how to get the right information out? Do I have everything I need to make this decision or are other important data points buried in the software somewhere? This frustration can lead to making decisions with incomplete information. Even worse, engineers may not use the system and just assume everything (asset information, preventive maintenance requirements, etc.) is ok. Instead of using the EAM, they may keep asset records outside the system in spreadsheets and data tables. The entire organization suffers because of this lack of engagement in the process.

***[An agile] approach also allowed the team to improve existing processes, rather than simply replicating inefficient ones in the software.***

## Removing Obstacles to Boost Employee Engagement

When we set out to improve our asset management program and better analyze our maintenance data, we quickly realized the limitations of the available information. The complexity of the EAM system user interface hindered our ability to collect more complete and higher-quality information, which is important for improving analytics. We saw opportunities to enhance work order details of inspections and repairs, the accuracy and consistency of labor hours charged for similar jobs, and asset record information. To meet this challenge, we set out to provide a better user experience for our employees. We sought to increase engagement to get the data we needed to improve our asset management program.

Creating a user-friendly EAM system was challenging due to the vast scope of work. We wanted to improve users' interaction with the functionality they already had, such as work planning and scheduling, but we also wanted to capture all supporting activities outside of the existing EAM system, such as documenting crew availability. We decided to proceed in small increments, using an agile approach so that we could gauge user feedback on the changes we introduced. This approach also allowed the team to improve existing processes, rather than simply replicating inefficient ones in the software. Our existing EAM system was not designed to support agile development, so we sought a third-party solution to integrate with our EAM system.



We chose the ENGAGE™ platform by Endeavor, a company that shared common goals and understood our business. ENGAGE met the needs for our critical attributes:

- **Information Transparency** – it is easy to enter and find data in the system so people are more willing to participate;
- **Flexibility** – the existing software modules are highly configurable;
- **Extensibility** – it is easy add new functionality and modules;
- **Easy to use** – simple, intelligent screens that prompt users for the right information, anticipate their needs based on responses, and provide immediate feedback.

These attributes were critical, as we didn't know how the final product would look when we started this project and needed a team of developers to collaborate with us and provide insight based on industry experience.

Our design focus was simple: Give users what they need with the least number of clicks and create an interface so intuitive that training was unnecessary. In addition, eliminate duplicate data entries, thereby building productivity improvements into the software.

Our approach sounds simplistic, but we applied a lot of effort and all our expertise behind the scenes. It required us to re-engineer our entire work management process.

We accomplished this by asking stakeholders how they worked, what information they needed to get their work done, and who they interacted with. The team would then take this information, decipher requirements vs. preferences, and create prototype screen designs that users could evaluate. We gathered and evaluated prototype feedback and modified the product to test user acceptance. Upon successful testing, we put changes in production and started the cycle started all over again for the next process improvement.



The rewards for our efforts exceeded our expectations. In one year, the productivity of the pilot group improved more than 50 percent. To put this in context, our project pay-back period was less than two years for only the pilot group, which represented less than 10 percent of the user base! In addition to the financial benefits, data quality significantly improved. Engineering could readily access information and the organization was finally able to measure performance. This enabled continuous improvement.

Achieving organizational adoption of the new system took time. We were not just changing software; we were changing our culture. While these changes were taking place, the pilot team continued to strive to find more opportunities and synergies to leverage with the platform. As the functionality grew, so did the size of the pilot team, as more subject matter experts wanted to join the process. We achieved widespread use and acceptance due to the unprecedented user empowerment. Whereas most EAM systems are implemented from the top down (IT or executive driven), ENGAGE is implemented from the bottom up, focusing on improving the productivity of the people using the software the most. Combined with the quantifiable improvements, the impact this adoption has had on asset management program overall effectiveness is immeasurable.

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## Better Employee Engagement, Better Asset Management

Whether considering the purchase of an EAM, a third-party solution, or an EAM upgrade, make the user interface design an important consideration. Solely identifying requirements without specifying how that functionality should interface with the user and your business processes is a common mistake.

Our investment in people, process, and information management has provided a strong foundation for growth and improvement. More users using the system since they don't need training and can get the information out that they need. The combination of a strong culture throughout Operations, Maintenance, and Engineering and engagement with the processes and data provides true institutional knowledge and continuous improvement. Because we can rely on the information we have, the ability to implement more advanced analytics, artificial intelligence and machine reinforcement learning will help us achieve an even higher level of automation and efficiency.

Effectively organizing information while providing software users with tools that make it easy to do a job achieves objectives and optimizes asset life-cycle costs. Improving the user interface to simplify entering and accessing information is the first step toward employee engagement on the way to a cycle of continuous program improvement. Better employee engagement results in better asset management, and a more efficient and successful organization.

## About Matt Walther

Matt Walther is a section manager in the Asset Management and Technology Development organization at Con Edison in New York. A mechanical engineer with a master's in business administration, he started his career in construction, operating heavy equipment and managing projects. Matt has been with Con Edison for more than 25 years, starting as a maintenance supervisor in power generation, before moving into asset management with the INPO AP-913 implementation at the Indian Point nuclear plant. After developing the PM basis with the initial rollout of Maximo, Matt moved to Substation Operations, where focuses on improving maintenance effectiveness through the implementation of user-friendly work management tools and streamlined processes.

## About Endeavor

Endeavor is a growing software development company focused on creating powerful, intuitive, and extensible web-based applications for asset-intensive industries. We were named to the 2020 Inc. 5000 list of the fastest growing private companies in the U.S. and are continuing to expand our footprint across our ENGAGE, Illuminate, and EP-Plus products. We strive to empower our customers to be more productive, achieve better results, and enjoy their work. Visit our website at [endeavor.com](http://endeavor.com) to learn more about Endeavor and our products.

