

## What's the real benefit of AI in Asset Management?

Many say Artificial Intelligence (AI) is revolutionizing physical asset management by enhancing efficiency, reducing costs, and enabling predictive maintenance. The global AI in asset management market was valued at approximately USD 2.61 billion in 2022 and is projected to grow at a compound annual growth rate (CAGR) of 24.5% from 2023 to 2030.

In the ever-evolving landscape of asset management, the integration of Artificial Intelligence (AI) offers remarkable potential to transform operations. However, its implementation can be a double-edged sword: when used effectively, AI can drive significant improvements, yet, if misguided, it can become a costly distraction.

### The Current Trends in AI-Driven Asset Management

- **Predictive Maintenance:** AI algorithms analyse sensor data to predict equipment degradation, allowing for timely maintenance and thus reducing downtime. The allure is to provide earlier detection of degradation (or potential) and more predictable remaining operating windows.
- **Integration with IoT:** Combining AI with the Internet of Things (IoT) enables real-time monitoring and management of assets, leading to improved operational efficiency. Increasing the inputs to models supports wider monitoring capabilities which can connect asset condition and operational parameters.

### Benefits of AI in Asset Management

- **Cost Reduction:** Implementing AI-driven predictive maintenance can reduce maintenance costs by up to 30% and eliminate breakdowns by 70%. This is largely on the back of improved asset condition detection, with cost effective yet high quality sensors. Currently however the balance of cost to implement versus benefit makes the decision to use AI or more traditional threshold alarms less clear.
- **Operational Efficiency:** AI streamlines asset tracking and maintenance processes, leading to significant cost savings. A study by PwC indicates that AI could reduce global greenhouse gas emissions by 4% by 2030, highlighting its role in enhancing efficiency and sustainability. This connection of asset condition to operating parameters presents a real opportunity for organisations particularly within the sustainability domain.

### Challenges in Adopting AI

- **High Initial Costs:** The implementation of AI systems requires significant investment in technology and infrastructure. Most have found that while solutions are effective the ability to scale implementations to create a workable ROI remains elusive.
- **Skill Gap:** There is a shortage of professionals with expertise in both AI and asset management, necessitating investment in training and development.
- **Ethical Considerations:** The use of AI and in particular Generative AI raises concerns about data privacy and the ethical implications of automated decision-making.

## Emerging AI Technologies for Asset Management

- **Digital Twins:** While “digital twins” have been around for a while, creating virtual replicas of physical assets allows for real-time monitoring and simulation, using a multitude of inputs not typically used, improving maintenance strategies has remained somewhat elusive. With the proliferation of AI this is one concept that is gaining traction and will likely become typical soon. Companies like Shanghai Automobile Gear Works have utilized digital twins to enhance equipment utilization by 20%.
- **AI-Powered Robotics:** Robots equipped with AI can perform complex maintenance tasks, reducing human error and increasing safety. Another concept that has been with us for a while but is now gaining momentum. As the cost to utilise robots for asset condition assessments, comes down, they can disrupt asset maintenance practices.

## Future Predictions

- **Sustainability and Energy Efficiency:** AI is expected to play a crucial role in achieving sustainability goals, likely through a more holistic view of operations and the contributors to energy use and emissions.
- **Quantum Computing Integration:** The combination of AI and quantum computing holds the potential to solve complex asset management problems more efficiently, though this is still in the exploratory phase.

## Summary

Like most domains AI is set to transform physical asset management by enhancing efficiency, reducing costs, and enabling predictive maintenance. It is true though that to-date the only real use cases being widely adopted are:

1. **Predictive Maintenance,** with a current emphasis on cost-effective high-quality sensors providing data to scalable models to detect equipment degradation. More work is being done to improve the ability to predict the urgency of corrective action based on the degradation detected and current operational conditions.
2. **Process or Operations Optimisation,** with a focus on continual optimisation of process set-points based on current operations, materials and equipment condition.
3. **Training, Knowledge base and skill gap,** Generative AI is finding a use case to provide domain expertise support to new or inexperienced maintainers and asset management staff, or augment operations team with remote AI assistance.
4. **Automation** is another area where AI excels. Repetitive tasks, such as data entry and reporting, can be automated, freeing up human resources to focus on more strategic activities. This boosts productivity and allows for a more streamlined operation.

However, the allure of AI can sometimes overshadow practical considerations. Organizations may rush to implement AI without fully understanding their specific needs or the technology's capabilities. This can lead to significant investment in AI solutions that don't align with business objectives, resulting in wasted resources and potential setbacks.

To harness AI effectively in asset management, it's crucial to adopt a balanced approach. Organizations should start with clear, specific goals and ensure that AI solutions are tailored to

meet these objectives. Human oversight should always accompany AI-driven decisions to mitigate risks. By strategically integrating AI, asset managers can unlock its potential as a powerful tool rather than falling prey to its pitfalls as a distraction

In conclusion, AI's role in asset management is undeniably potent, but its success hinges on thoughtful implementation and continuous human oversight. Balancing innovation with practicality can transform AI from a potential distraction into a cornerstone of high-performance asset management.

**Sources:**

- IBM, 2024: AI Trends and Developments. [Link](#)
  - PwC, 2024: AI in Maintenance and Asset Management. [Link](#)
  - Grand View Research, 2023: AI in Asset Management Market Size Analysis Report. [Link](#)
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