



# AVOIDING PITFALLS IN DIGITAL MAINTENANCE PROGRAMS

## Asset-intensive industries can drive business value with the right plan

Predictive maintenance is a common application for digitalization, and it can be highly cost effective. The U.S. Department of Energy has stated companies can expect savings of eight to 12 percent over preventative maintenance, and up to 40 percent over reactive maintenance. For asset-intensive industries, digital maintenance programs are very compelling.

The impact can be significant. For example, extending the **operational lifetime** of power plants via improved maintenance and reduced equipment stress could extend equipment life for five years and reduce the amount of investment needed. And while companies do understand this and are increasing investment, the majority of transformations do not succeed, with research showing a failure rate of **87 percent**.

There is no one magic solution. But advanced data analytics, generative artificial intelligence, machine learning, and digital twins can reduce operations and maintenance cost when the right plan is in place.





# DISSECTING THE DIGITAL MAINTENANCE DILEMMA

The reasons for digital maintenance program failure are not new. Here are the four main causes.

## Lack of clear objectives and roadmap

- Stakeholders don't understand business impact, in terms of value and scope. This makes maintaining support more difficult and increases the likelihood of low adoption.
- An unclear roadmap adds uncertainty to the timing of the program's implementation and impact.

## Poor data quality and integration

- Not anticipating data-quality issues inhibits realizing value from a program.
- Poor data yields poor results.
- Improving data quality can be extensive, requiring alignment across departments.

## Too focused on technology

- Being too focused on technology obscures the main objectives, which should be overcoming business challenges and creating value.
- Focusing too narrowly on one technology often does not yield the intended results since the system of business processes and infrastructure is not adequately considered.

## Unrealistic expectations

- Overly optimistic goals about the outcome sets companies up for disappointment, inhibiting adoption after the first deployment.
- Eroded trust makes further business engagement more challenging.

# MOVING DIGITAL MAINTENANCE FORWARD

Starting small and managing scope are the first steps of a successful program. Even a program intended to have a large impact benefits from better management of expectations and more time to resolve data-quality issues through a stepwise approach that addresses new use cases over time. Additionally, due to the limited initial scope, unknown technology risks or gaps can be identified and mitigated with less impact.

The second critical piece is engaging maintenance personnel. Heavy-asset industries work with highly critical assets that need to remain running. When the systems go down, production is impacted, leading to lost revenue. A digital maintenance program needs to include the people operating the equipment every day, so the decisions made do not have unintended consequences.

These programs need to be driven by a long-term management vision, but the right plan could generate value in as few as six months, in small increments. Consider starting with a processing unit, a plant, or an asset category. The key is to be focused on impactful business value.

A multi-year program focusing on incremental value through realistic milestones requires a commitment to business objectives even when there are changes in management or priorities. Building a digital maintenance program through the Agile framework allows for business requirement changes to be incorporated and met by the digital program.

## FINDING THE FIRST STEP

In the dynamic world of maintenance and asset management, staying ahead requires embracing innovation. From predictive maintenance and digital twins to drones, connected workers, and generative AI, the future is filled with exciting possibilities. As companies navigate this technological frontier, there is the opportunity to unlock new revenue streams, enhance safety, boost productivity, and make smarter decisions. The maintenance landscape is evolving, and those who harness the power of these innovations will lead the way into a more efficient, profitable, and exciting future.

Capgemini is already helping clients navigate these innovations and find the right use cases to deliver business value. Once the value is delivered from the first project, the ideas and innovation will expand. Aligning the vision, setting expectations, and having a leadership commitment will lead to success. Are you ready to embark on this journey to change the way you operate?







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