Efficient Plant Operation with HanPHI at Korea South-East Power Company

Introduction

A process plant constantly runs thousands of pieces of rotating and non-rotating equipment. This equipment operates systematically to produce output. A power generation facility, for instance, operates through the monitoring and controlling of highly valuable assets across the plant. Power plants manage assets through regular maintenance, repair, and replacement of equipment and systems. However, equipment failure is highly unpredictable when using traditional alarm systems, and often results in catastrophic damages to both the equipment and workers.

When unscheduled downtime occurs, it takes significant financial and human resources to repair or replace the equipment. On average, power plants experience two to three unscheduled downtimes annually, representing a cost of $50,000 plus.

What if a plant had a clear view of impending equipment failure?

By finding abnormal patterns across data and identifying problematic equipment in advance, a plant can secure sufficient time to fix the equipment before it becomes a catastrophic event. Consequently, management can reduce maintenance costs, thereby allaying concerns of decreased profit or output. The plant may be able to extend equipment lifecycles and increase equipment stability. Thus, safer plant operation is possible.

True operational excellence is no longer a far-fetched goal of the process industry and neither is an intelligent alarm system a technology of the distant future.

HanAra Software

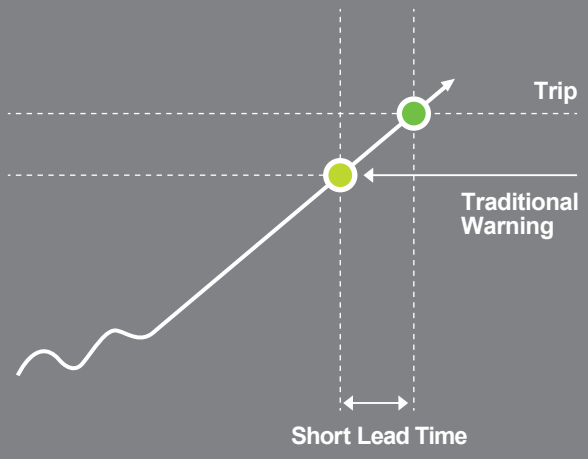
How HanPHI Can Provide Future Technology Now in Your Plant

Thousands of pieces of equipment across the plant are highly interconnected. A plant generates millions of pieces of real-time data during its operation. In complex data sets, each piece of equipment is represented with itsunique values reflecting the equipment status

HanPHI captures valuable information embedded in the ocean of plant data. HanPHI predicts upcoming equipment failures based on dynamic evaluations of expected values and real-time values. HanPHI's innovative and patented intelligent predictive modeling technology enables the prediction of potential and hidden failures. Every day process plants leverage this powerful solution to achieve operational excellence.

Detecting abnormal equipment behavior based on the threshold of actual values fails to reflect the context information. This concept is similar to the human body's vital signs. Children and adults have different normal parameters. Likewise, in order to produce meaningful intelligence, plants need to learn the operating environment and characteristics of equipment prior to configuring normal parameters for each piece of equipment. With this intelligence, plants can predict impending failures and secure sufficient lead time for maintenance. The length of lead time for maintenance is inversely proportional to the cost of maintenance. With sufficient lead time, plants can maximize profit.

Traditional Warning



Early Warning with HanPHI

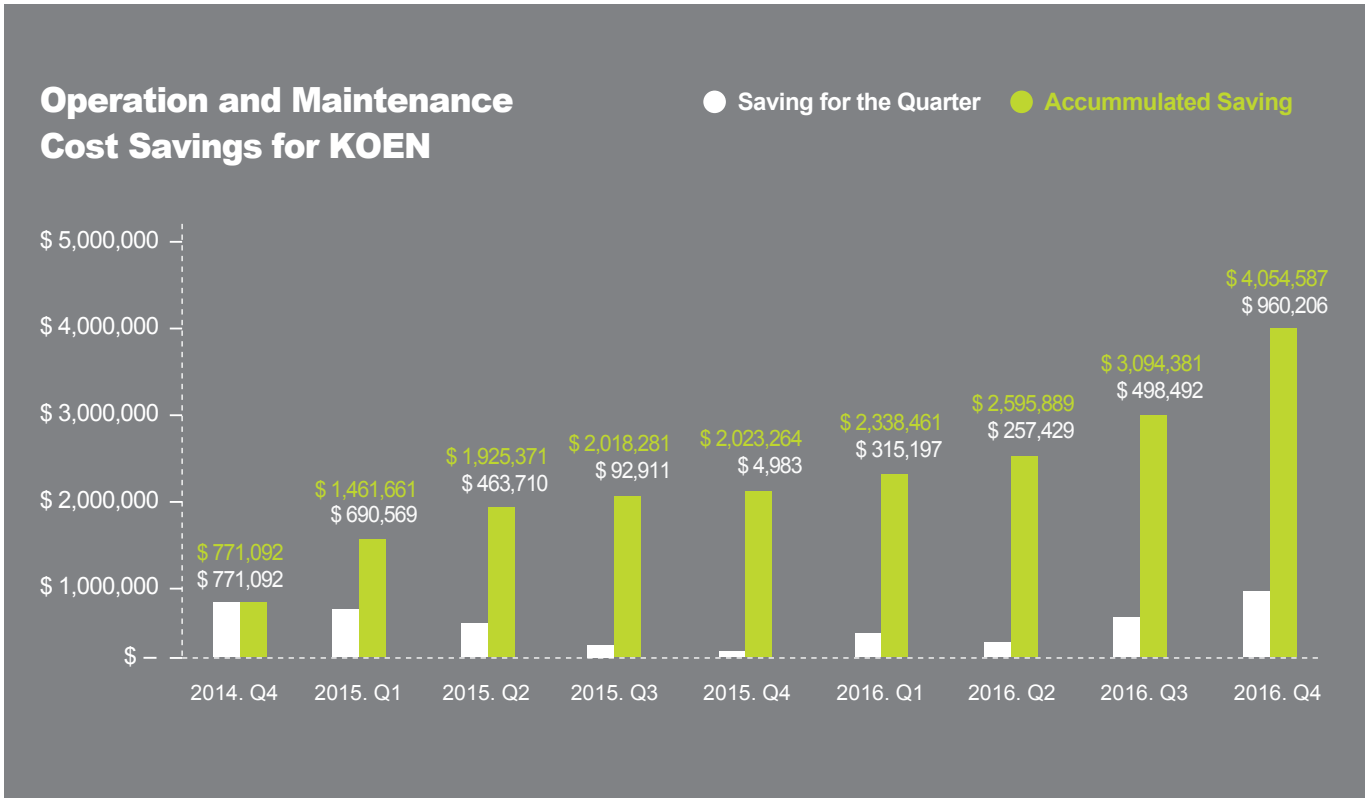
Enough lead time for proactive maintenance

HanAra Software

How Much You Can Improve Your ROI with HanPHI

Korea South-East Power Company (KOEN) is a major power generation company, producing approximately 10,000 megawatts of electricity at 5 plants.

Since installing HanPHI in 2012, KOEN has proactively managed its plants. With HanPHI, KOEN has increased its annual electricity output and the lifecycle of its assets, and decreased its maintenance cost, repair time, fuel usage, and unscheduled downtime. KOEN substantially reduced its costs and increased its profit after installing HanPHI.



Since HanPHI was implemented, KOEN saved around $700,000 during the first three months of operation by preventing equipment failure and providing maintenance on time. After two years and three months of operation, KOEN was able to see a savings of approximately $4 million for their operational and maintenance costs.

The innovative central early warning system enables KOEN's headquarters to monitor all power units and provide operating and maintenance recommendations to their sites at the right time.

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Value of HanPHI

HanPHI delivered significant value to KOEN. KOEN experienced asset-protection improvements, increased availability, cost reductions, and extended equipment lifespans. HanPHI provides similar value to other customers across diverse process industries by identifying potential failures.

HanPHI offers value far beyond traditional alarm systems. With HanPHI, a plant can now realize the benefits of predictive maintenance. Management can access an intuitive and clear overview of entire plant floors, enabling optimal plant operation and maintenance and, more importantly, enabling operational excellence.

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