The ROI of Plant Management Software

Understanding the Financial Impact across Production, Quality, and Compliance Systems in Process Manufacturing

SAFETYCHAIN

Foreword

Plant Management Software continues to be the gold standard with the greatest potential to improve production and yield for process manufacturers. As an enterprise platform, these systems can automate the tracking of critical manufacturing metrics, including first pass quality, yield, waste, compliance, and OEE performance. By gaining real time visibility into the performance of your plant(s), management teams can leverage these tools to improve performance, productivity, and ultimately, profits.

No matter your specific line of business – whether it's dairy, protein, frozen foods, baked goods, produce, or plastics and packaging – your facilities can benefit from plant management software in tremendous ways, but making sure there is a positive ROI is critical before investing in software solutions. Plant Management Software offers significant returns in three core areas: Production, comprised mainly of OEE and SPC solutions, Compliance such as CAPA and supplier management and scorecards, and Quality systems. This guide outlines the potential for each of these to impact your company's bottom line and profitable growth.

The ROI of Plant Management Software

Plant management software offers a significant return on investment in three major areas: quality, production, and compliance.

Quality

Time in Sanitation/Pre-Op

Sanitation and pre-operational (pre-op) processes are essential to ensuring no hazards are present before production begins. For instance, quality personnel might check to make sure:

- **All equipment is clean and functioning properly.**

- **All employees are following personal hygiene measures.**

- **Proper packaging is on hand.**

- **There are no pests or other contaminants present.**

Pre-op checks are a critical step for supporting quality before production even begins. Yet, they're also time-consuming. Instead of using pencil and paper, quality teams can leverage mobile forms for 10-20% time savings in sanitation and pre-op activities.

On-Time Line Start

Getting started on time keeps your production running smoothly. With fewer hiccups in startup, your teams will be better able to stay on schedule and ensure on-time deliveries. Plant management software ensures operators have everything at their fingertips to get started on schedule, including checklists and forms. Plus, it gives quality managers the insights into production data to spot

startup issues by line and shift, revealing potential problem areas with equipment or staff that can be addressed through maintenance or training. Companies can **expect to see a time savings of 5-10%.**

Reduce Product Holds

A hold doesn't necessarily mean a product is faulty, just that it needs to be investigated further. Typically, it indicates a variance from standard, which may or may not be acceptable. Investigating these issues is time-consuming, and may call for a Faulty Product Report which details the time, date, reason for hold, and other key information. The product may then be reworked or destroyed by the least-costly method.

Product holds are never desirable. Reducing holds calls for strict adherence to proper procedures, as well as the ability to drill down into the root cause of holds when they do occur so they can be prevented in the future. Plant management software helps in both areas: it empowers operators to better fulfill their roles, as they don't have to take time away from their tasks to fill out manual reports. Look for solutions that offer root cause analysis so quality managers are better able to pinpoint the reasons behind recurring holds. As a result, it can **help you reduce holds by 15-20%.**

Scrap & Waste

Quality teams are responsible for controlling scrap and waste and identifying their causes. Nearly one-third (32.4%) of all food waste in manufacturing is caused by production issues.1 For instance, in rice manufacturing, broken kernels are rejected as they won't process well for products like cereals. Identifying key variables which can affect the quality of products, such as temperature and fan speeds, allows quality teams to reduce out-of-spec product. This is made possible when plant management software allows you to uncover trends and correlations in your data that indicate where the real quality issues lie. When a proper solution is used, it should **lead to waste reductions of 5-7.5%.**

Sampling & Inspection Checks

Sampling and inspection checks are quality measures that help to ensure products are being made safely and according to specifications. With plant management software, you're able to monitor your production more closely for potential issues, intervene sooner when concerns do arise, and use tactics such as SPC to tighten quality measures, and as a result, see a reduction in unneeded checks to **reduce the overall time spent on inspection checks by 5-10%.**

1. https://www.foodengineeringmag.com/articles/97717-better-processing-to-reduce-food-waste-streams

CAPA

Corrective and preventive action (CAPA) drives continuous improvement, helps to support FSMA compliance, and promotes customer satisfaction. To be effective, however, a correction can't be carried out on the fly. This would only solve the symptom of an underlying issue. Instead, a robust CAPA program calls for root cause analysis to identify what went wrong, why the issue wasn't detected, and any other variables influencing the outcome.

All of this takes time to carry out. Unlike point solutions, plant management software provides a wealth of data at your disposal, and with the ability to quickly pinpoint trends and anomalies, root causes become simpler to identify. Thus, you **can decrease resolution time for CAPAs by 10-20%.**

Foreign Materials

Plant management software empowers quality teams to have greater visibility into each line with data uploaded from IoT-enabled equipment and operators. This allows them to act quickly when issues such as foreign materials arise, and also prevent them from occurring in the first place. Your plant can see a **reduction of metal, bone, skin, feathers, and other foreign materials by up 5-10%.**

Rework

Having real-time notifications when a check is missed or failed instead of finding out days later when paperwork is reviewed will enable a proactive (versus reactive) approach to quality management. Many times, this allows for the product to still be used, which can prevent having to put it on hold — a dilemma that can ultimately result in disposal of the product, customer shortages, or additional rework. The reduction of rework will **vary from plant to plant based on individual factors.**

Production

Units/Pounds by Line

Increasing the number of non-defective manufactured items (yield) is a priority for any plant. Yet, this goal encompasses a complex interplay of factors. For instance, controlling temperatures, the combination of ingredients in a recipe, and even filling and packaging can all contribute to yield problems. To identify these root causes, you must be measuring them.

Plant management software allows you to measure – and thus manage – every aspect of your operation, beginning with raw material losses caused by net-weight fill and changeover issues, and extending all the way through to packaging. With a comprehensive view of what could be going wrong across any given process, line, or shift, **you can expect to improve yield by 15-25%.**

On-Time Shipments

Customers who routinely receive their product on time are happy customers. Delays throughout any aspect of production can ultimately lead to shipment delays. By automating tasks such as data collection and providing insights into overall operations so bottlenecks can be identified and managed promptly, plant management software **offers an improvement of on-time shipments of 5-10%.**

Unplanned Downtime

Unplanned downtime is estimated to cost the food industry a whopping $30,000 per hour.[2] Equipment failure is the most common reason for downtime, and repairing or replacing parts or machinery only extends the amount of time for which a line is down. This creates a ripple effect in which shipments are delayed, revenue is lost, and customers are dissatisfied.

Plant management software helps you reduce downtime by giving you tools to measure OEE. It unlocks instant insights into downtime, fully productive time, run time, and net run time by automating the collection of equipment data and using advanced algorithms to pinpoint weaknesses in your production. In doing so, it allows you to act on issues before they cause significant disruptions to your operation.

Deviations from critical control points (CCPs) are another common cause of downtime. Perhaps a metal detector fails to recognize a check piece, or a product's internal temperature is too hot or cold. No matter the scenario, you must either stop the line or divert product to a different line. While deviations are a direct quality issue, they also have an impact on production. When CCP issues are no longer in the way (thanks to better visibility into operations), production is able to run smoothly. **Overall, you can expect a time savings of 5-10%.**

3.18 hrs

Factories lose **3.18 hours** of Minor Downtime per day (each less than 10 minutes).[3]

Overpacking & Overfilling

Reducing over pack and over fill is a common objective for many CPG and food manufacturers. Less giveaway means more product and bigger profits. Using SPC enabled by plant management software, you can lower your specification limits while still ensuring packages are filled sufficiently. The system allows you to identify causes of specification variability so that you can see what causes

2. https://www.foodqualityandsafety.com/article/motors-help-baking-equipment-reduce-factory-downtime/

3. Epicor, Analysis by Sage Clarity, 2016 Copyright Sage Clarity (http://sageclarity.com/idea-lab/2016-benchmark-study/)

overfilling and then address the root issue. With this approach, you can see **a 5-15% reduction in overpacking and overfilling.**

Travel Between Plants

Production (and quality) leaders need to ensure operations are running smoothly across all facilities. Jumping from plant to plant can be a hassle under normal circumstances, but the travel concerns spurred by the COVID-19 pandemic have only compounded these challenges. Plus, with recent changes in GFSI's stance on remote audits, and the ability now for doing remote certifications, CFOs should expect to save on travel & expense budgets. Implementing software enables remote monitoring of all facilities so senior managers can see exactly what's going on at each location without physically being there. Real-time dashboards display metrics for a high-level overview of how operations are running, with the option to drill down further and investigate any areas of concern as needed. Mobile apps can even enable photo uploads for an even closer look. Since the travel time between plants varies on the number of each company's locations, time and cost savings can be determined on a case-by-case basis.

Compliance

Record Review & Sign-Off

Review of external documents is laborious and time-consuming in many plants. Compliance teams must ensure suppliers have up-to-date certifications and that all requested documentation is submitted in a timely matter in completion. Oftentimes, managers wind up having to chase suppliers down and follow up repeatedly. Reviewing and signing off on records is another time drain in itself.

With plant management software, you can leverage a supplier portal to automate a good portion of your communications. For instance, if a certificate is approaching its expiration date, the system can trigger an automatic notification to remind suppliers to submit new documentation. Record reviews and signoffs can be achieved with a few quick clicks. Thus, **you can reduce the hours you spend on record review and sign off by 15-20%.**

Audit & Risk

Plant management software reduces the time it takes you to prepare for an audit. Instead of shuffling through filing cabinets and binders, all of your program documents will be conveniently located in one, easy-to-access repository. You can filter information by date, line, shift, and other key characteristics to quickly pull up any information needed during or before an audit.

Another key auditing challenge is incomplete checks. With mobile forms, employees are prompted to complete every necessary step in key processes, ensuring that nothing is left incomplete. This further reduces overall audit time and supports improved compliance.

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Plant management software should also offer root cause analysis (RCA) and improve team collaboration and access to RCA trend data. Instead of huddling around whiteboards and hastily assigning tasks, a system based approach can allow multiple facilities to learn from one another by sharing insights. Overall, the system can **reduce audit times and RCA labor by up to 50%.**

Regulations & Certifications

Transferring compliance programs into a cloud-based system reduces the time it takes for a company to adjust to changing regulations. All program data becomes easily accessible from the plant floor; workers have information right at their fingertips instead of having to leaf through program documents or access a desktop computer. In a market where governing bodies such as the FDA, USDA, and others are continually updating guidelines, this capability is critical to adhering to regulations and safeguarding your brand.

Plant management software also enables certifying bodies (CBs) to perform certifications quicker, as remote audits are now permitted under renewed guidelines from GFSI for the use of Information Communication Technology (ICT). While this change was originally prompted in response to the COVID-19 pandemic, it will continue to accelerate the auditing process and help companies save on travel costs far into the future. Plant management software results in **up to 30% less time spent on adjusting** to new regulations and the process of certifications.

Auditing Suppliers

Plant management software can significantly reduce the time spent internally on preparing for and undergoing audits. It helps to ensure all of your records are thorough, accurate, and centralized in a single location, so your quality assurance teams won't have to track down files when an auditor requests them. While this lifts a tremendous quality burden, the auditing benefits can also be extended to your supplier management program.

Many CPG and Food & Beverage companies routinely perform supplier audits. With the cost of travel, time spent on gathering documents, and actual time spent performing the audits, the process can be lengthy. Companies with many suppliers must dedicate significant resources to external audits, but plant management software can streamline the process. It enables remote auditing as well as alerts, notifications, and scorecarding, all of which are done remotely. Improved communications with suppliers and having a real-time view of supplier compliance will **save up to 45% of time spent managing suppliers with spreadsheets.**

About SafetyChain

SafetyChain is the #1 Plant Management Platform that improves yield, maximizes productivity, and ensures compliance for process manufacturers. Trusted by over 1,500 facilities, SafetyChain is the only enterprise solution uniting production, quality, safety, and supplier management.

INSIGHTS FROM THE
see suite

The SEE Suite from SafetyChain is our initiative to help evolve and extend modern plant management capabilities through action-oriented, real-time, operational visibility. From a leadership perspective, we understand today's manufacturing plants' ongoing digital transformation can appear like a daunting journey. The SEE Suite's overarching goal is to provide objective insight into the transformation process to accelerate that journey, proactively avoid the common barriers, and ultimately reach the destination known as your potential.