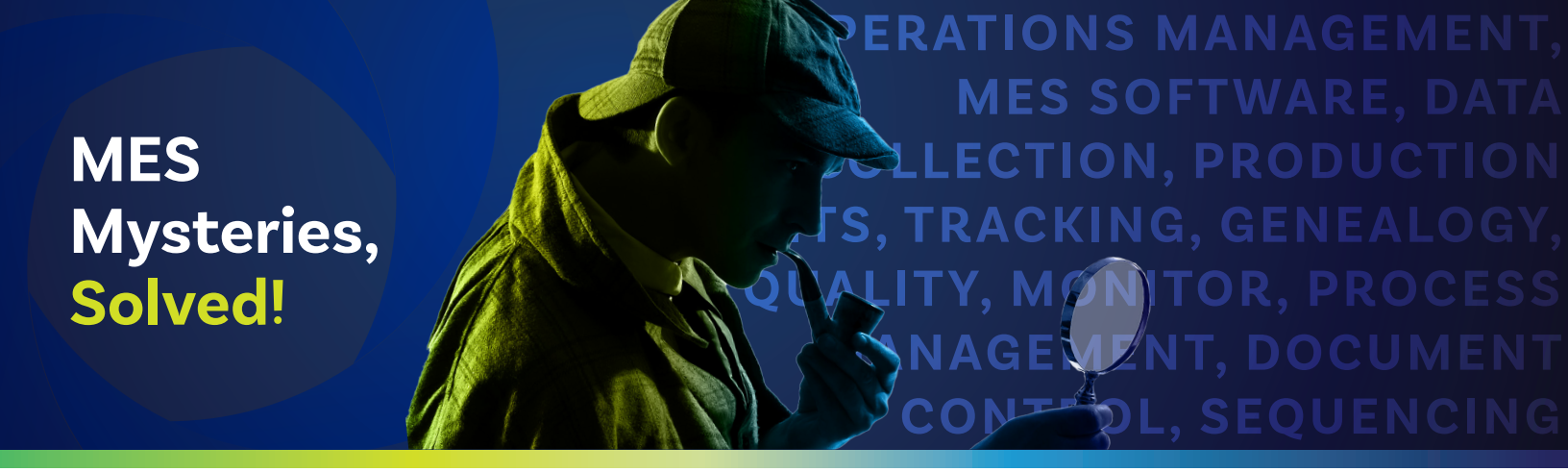
MES Mysteries, Solved!



"As one of our MES Practice Leaders, I spend my days deeply embedded in my specialty, but I'm also aware that while many of our customers are familiar with the terminology, they do not necessarily know where to start to solve their manufacturing challenges. I hope to pique your interest by addressing some of the most commonly asked questions about MES...in a brief, easy-to-understand manner."

Steve Murray, MES Practice Leader

What Value Can an MES Bring to Any (and Every) Manufacturing Organization?

Manufacturing Execution Systems (MES) provide governance of the manual activities that are part of a process manufacturing facility. While automation is certainly a part of most process industries, many manufactured products are produced with steps or tasks performed by humans, as well. There are a number of reasons for this: sites that make many products, making it difficult to automate; products that require 'in-process' verifications; and products with variable inputs. This is true for most industries—from pharmaceuticals to battery production to yogurt. Wherever steps are performed without automation, it's the job of someone in a quality-focused role to question all that can possibly go wrong. Did they use the right materials? Did we establish the required accountability for the production steps? Were the materials in good condition (spoiled milk is still milk)?

Ultimately, the manufacturer has to prove that they produce something consistently—so the customer/consumer has less need to test it and is more confident when they buy it. Quality issues can impact price, involve health or safety questions, and in general, impact the business. The integrity of the manufacturing data is critical—and MES drives that integrity. MES systems can also help lay the 'data foundation' for a manufacturing dashboard to help discover and address other manufacturing deficiencies, such as excess hold times.

Who Uses MES Systems?

Many industries use MES systems—they can be either discrete or process manufacturers. The requirements of the MES system are different for each and are often served by different vendors. Discrete manufacturing can be thought of as something like an assembly process. For example, a car needs to be assembled with all of the correct parts (SUV fenders do NOT go on a sedan), all of the parts of a particular model need to be assembled the correct way, and the result is a finite number of sellable units.

Process manufacturing is something that cannot be taken apart or sold in different quantities. Whether you are manufacturing food, paint, or pharmaceuticals, the materials/ingredients have to be mixed, reacted, heated/cooled, and 'processed' according to a very specific recipe, with a list of input ingredients. Within process manufacturing, MES systems are most common in processes that make 'batches' of product and where there are more manual steps. The need for certainty of the repeatability aspect makes it almost a requirement in pharmaceuticals and biotech, but there is growing demand in the chemical and food industries, as well.

All of this information is integrated with company business systems to support those in supply chain, finance, and quality—who drive orders into the MES and get data back—helping them understand the amount of material in production, produced, and collected as scrap material, for instance.

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What Is the Path From Concept to Deployment?

Process manufacturers can transition to an MES-based manufacturing environment over time. There are a number of options where you could start: an Equipment Logbooks function that does not fully interact with other systems; a Weigh & Dispense application that facilitates pre-weighing of the correct materials/quantities for a production batch; or even a simple Paper-on-Glass Electronic Batch Record to drive process enforcement and completeness.

How Can Apperture Help?

Many of our MES team members here at Apperture are process manufacturing experts who have worked in the life sciences and chemical industries for decades. We have the expertise to listen to and understand your manufacturing issues (many of which may seem like unsolvable mysteries), and then help guide you towards the best possible solution based on our knowledge and experience. We can help find, evaluate, and source the right commercial software products, as well as define the stages of deployment to help demonstrate value for the solution as it matures in your facility.

Wherever you are in your MES journey—from contemplating a new implementation to improving and expanding the system you already have—our goal is to ensure efficient, safe, reliable, and sustainable manufacturing processes. We can provide guidance regarding what to do, the expertise to configure your system, and the know-how to drive continuous improvement throughout your investments in MES. Please reach out to me to learn more.

Apperture Solutions is a consulting and implementation services firm for manufacturing companies looking to leverage their data and best-in-class technologies to make more informed decisions—from the plant floor, up through all levels of production. As process experts, we understand the benefits of integrating silos of data across the organization and transforming that data into actionable information. Our goal is to build bridges across the network to get the right information to the right people and ultimately achieve positive outcomes for all stakeholders. As process experts, we take a holistic view of operational procedures and critical equipment to achieve a competitive advantage for the long term. Apperture Solutions originated from R.E. Mason, and we possess the financial stability and reach to take on any greenfield, integration, or multi-site project, with confidence.

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