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Line managers are often told to use real-time information to better manage their packaging lines, without being told what real-time information is. Real-time information is a signal (such as a data point) that lets you see the good and the bad on the line quickly.

With real-time information, it's possible to fix broken machines quickly and many problems can be avoided. Without it, lines can go down without a moment's notice. To better use real-time information, you'll first need to know about two kinds signals: Status and flow. Let's talk about each, how they are used and then highlight three key benefits to using real-time information on your packaging line.

Status Signals

Think of status signals as your packaging line's "check engine" light. If you have status signal problems, it's time for quick action. For example, when your Andon light flashes red, you know that something is wrong with your machine—that's a status signal. A status signal tells you that you need quick corrective action to fix your machines before your line has serious downtime.

Flow Signals

Flow signals include real-time information such as speed, throughput and reject rates. Flow signals allow you to predict what may happen by seeing what's currently happening on your line. Is your packaging line running behind schedule? Perhaps it's running ahead of schedule? Both would be good to know, as you'll likely have to make operational changes to adjust.

How Line Managers Can Use Status and Flow Signals

When you see a change in your **status signal**, you need to give it immediate attention. This kind of real-time information makes it easy to find and respond to challenges in order to help avoid being hampered by hours of costly downtime.

For example, here are three reasons why a section of a line can go down:

- It's starved
- It's held
- It's broken

If the line is starved, the problem is upstream. If it's held, the problem is downstream. If it's broken, you know what the problem is, right? It's time to fix your machine.

Oftentimes, line managers struggle to determine whether or not a machine is broken, or where the line is underperforming. But if they attach photosensors to their printer, connect it to the IIoT and utilize data management solutions, they can determine line status immediately to see where the line is struggling. The bottom line is that real-time data can provide invaluable and actionable insights.

With **flow signals**, line managers can reduce, and help eliminate, waste. From what I've seen, and in my experience, packaging lines are normally behind 90 percent of the time and ahead 10 percent of the time. Flow signals allow you to address both to help keep your line running more efficiently and on target.

If you're running behind, flow signals let you see what areas are held up. If you're running ahead, you're likely overcompensating for something and it's altered the timing on your line. If you haven't told your scheduling employees to make changes when the line is running ahead, you're probably going to have downtime or a lot of waste.

Another way line managers can use flow signals and real-time information is to address the problem of high reject rates. You're balancing how fast your line is running with your reject rate, meaning that if you have to crank up the speed of the line to what management says—in these cases, the reject rate will be too high. Knowing what your reject rate and throughput are will help you create an efficient line, but this can be hard to know without a flow signal. Without real-time information, you often won't find out about changes to your reject rate from the third shift being too high until midway through the first shift.

The reject rate sends a very strong flow signal: if it rises, line managers need to fix their line immediately. The reject rate essentially tells line managers, "Something has changed. You'd better go and take a look at it."

Three Advantages of Real-Time Information

When you measure both status and flow signals in real-time and feed them to your line, you'll have three big advantages as a manager:

1. Your line operators will be empowered to know when things are going well and when they aren't going well. They'll have a standard work process in place to optimize your business and help save your line from unplanned downtime.
2. You'll have information to let you know how well you're doing, and whether or not you need to work on scheduling changes upstream or downstream. This will help you run the entire plant better and more holistically.
3. You'll have real-time, data-driven input for problem-solving at the point of impact.

So, instead of looking at the status report thinking to yourself, "What happened at 3 p.m. on Tuesday?" you can adopt real-time information to better understand what's happening and enable the appropriate changes to your packaging line. A better understanding of signals such as status and flow, and how they can be applied using real-time information, help you better identify the root cause of problems, and how to countermeasure them.