OPERATIONAL EXCELLENCE NEWSLETTER

When data becomes action: Moving beyond the dashboard.

Why automated decisions are the next frontier for continuous improvement.

automation · operations · lean six sigma · digital transformation

> The newsletter for operations leaders who prefer closed-loop systems over visible failure points.

Diagnosis: The Dashboard Trap

We have spent the last decade building incredible windows into our operations. We've installed sensors on every critical motor, integrated PLC data into cloud platforms, and built beautiful, high-resolution dashboards that tell us exactly what is happening—usually moments after it has already gone wrong.

But there is a fundamental difference between visibility and control. A dashboard shows you the fire; it doesn't put it out.

I have sat in many production meetings where leaders would point at a "red" metric on a screen, sigh about the deviation, and then wait for the next scheduled meeting to discuss why the process drifted. This is **The Dashboard Trap**. It creates a false sense of accomplishment because we feel like we are managing the problem just by watching it in real-time. In reality, we have simply automated our ability to witness failure without actually building the mechanism to prevent it.

A dashboard is not an action plan. When a technician sees a temperature spike on a screen and waits for a supervisor's "go" before adjusting a cooling valve, that isn't a lean process; it's a manual loop

masquerading as data-driven management. We are often just watching the machine fail in high definition.

The Micro-Decision Economy

To move past this, we have to change how we value decisions. In most modern manufacturing environments, we treat every deviation like it requires a human brain to solve. This is an expensive way to run a plant.

The reality of the shop floor is that many problems don't need a committee; they need a logic gate. We are moving into what I call the **Micro-Decision Economy**. In this model, we identify "low-stakes" decisions—adjustments so routine and well-understood that if a human has to intervene, the process has already lost its rhythm.

Think about a torque setting on an assembly line or a feeder speed based on material thickness. If these variables fluctuate within a known range, the system should adjust itself instantly. Every time we require a human operator to see a data point and then manually input a correction, we are introducing "human-in-the-loop" latency. This doesn't just slow down production; it introduces variability into every single cycle because humans aren't consistent at making those tiny adjustments 100 times an hour.

Why we are stuck in manual loops (and what that looks like)

Most organizations stay stuck in the "view only" phase because of a fear of losing control. It feels safer to have a human click a button than to let a script do it. But this safety is an illusion that costs us consistency and speed.

We often see teams justify these manual loops with common excuses. Below is how those justifications usually stack up against the reality on the floor:

The Convenient Excuse	The Operational Reality
"We need a human to verify the data before we act."	We are paying a skilled operator to perform a task a PLC could do in milliseconds.
"The process is too complex for an automated response."	The process isn't complex; our definition of the 'safe zone' is just poorly mapped.
"We don't want the machine to make its own decisions."	We are choosing to let the product drift into a non-conforming state because we’re afraid of a script.

When we rely on manual loops, we aren't being cautious; we are just delaying the inevitable. If an operator has to "notice" a problem and then "decide" to fix it, the defect is already in the bin. The goal isn't for the human to be faster at making that decision—the goal is to remove the need for the human to make the decision at all.

The Closed-Loop Architecture: From View to Action

To break out of the dashboard trap, we must move toward a **Closed-Loop Architecture**. This moves us from "Observe and React" to "Detect and Correct." A truly mature process follows three distinct phases where data flows directly into physical execution without waiting for an email or a walk_radio call.

1. **The Detection Layer:** This is your current dashboard. It gathers raw signals—vibration, temperature, cycle time, torque, weight—and compares them against the engineering specification.
2. **The Logic Gate:** Instead of sending that data to a screen for a human to see, the data hits a set of "if/then" rules. If Torque < X, then increase Motor Y by 5%. This is where the decision happens in real-time.
3. **The Actuation Layer:** The system physically adjusts the equipment based on the logic gate.

In this model, the dashboard isn't for the operator to make decisions; it’s for the engineer to verify that the automated loops are functioning correctly. You move from "watching the fire" to "tuning the sprinkler system."

Three steps to building automated logic

Transitioning a single process from manual to automatic doesn't happen overnight, but you can start with one station next week. Here is how you build it:

1. **Identify the High-Frequency Decision Points.** Walk the line and look for any instance where an operator has to "adjust" something based on what they see or hear. If they are doing it more than once a shift, it’s a candidate for automation.
2. **Define the "Safe Zone."** Work with your engineers to establish the hard boundaries of the process. For example: *“If the belt tension fluctuates between 40 and 60 lbs, adjust motor speed automatically; if it exceeds 60lbs, trigger an alarm.”* This defines exactly where the machine is allowed to "think" for itself.
3. **Map the Feedback Loop.** Map out the physical path from the sensor to the actuator. If you have a load cell that detects a part is underweight, does the signal go to a PLC? Does that PLC talk to the feeder motor? Ensure there are no "human breaks" in the chain of information between the detection and the correction.

Practical takeaways: The next Gemba walk questions

On your next walk through the facility, don't just look at the screens. Look at the people interacting with them. Ask these three questions to identify where you can move from visibility to action:

- **"What is this person watching on that screen, and what do they do if it turns red?"** (If the answer is "Wait for a supervisor," you have a manual loop.)
- **"How many times a day does this operator have to make the exact same adjustment?"** (Any answer higher than once a week should be an automated logic gate.)

- **"What happens if they are too busy to see that screen right now?"** (If the process fails because someone didn't notice a number, you don't have a dashboard; you have a failure waiting to happen.)

Stop building bigger screens. Start building shorter paths from data to action.

Call to Action

What is one small process adjustment your team could automate this week? Share what you learned by emailing newsletter@sixsigmakaizen.com and tagging a colleague who needs it.

Newsletter replies: newsletter@sixsigmakaizen.com · X: @kaizen_6sigma

Stay curious, stay improving,

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References: The New Economics of Intelligence: Why Small Decisions Matter Now