OPERATIONAL DEEP DIVE

The Industrial Policy Trap: Making Quality Part of Economic Growth

How major investments in manufacturing are far more than just jobs.

Industrial Strategy · Advanced Manufacturing · Supply Chain Resilience · Economic Development

> The newsletter for executives who want to see the whole system, not just the next quarterly report.

The $850 Million Headline: More Than Just Jobs

When you see a headline like "$850 Million Investment in Advanced Air Mobility," the usual reaction is to celebrate the numbers. It’s easy for policymakers and executives to point at that figure as "growth" or "job creation." But on the shop floor, we know that a massive capital injection isn't the same thing as an operational success. A check from a government agency doesn't automatically build a robust manufacturing culture; it just buys the machines and the space to house them.

The real value of such an investment shouldn't be measured by how many people are standing on the floor, but by what those people are capable of doing consistently over time. In high-stakes industries like aerospace—where "good enough" can result in a catastrophic failure—the difference between success and disaster is whether the organization has moved beyond just having "capabilities" to having *disciplined processes*.

We need to stop conflating investment with maturity. A factory full of state-of-the-art robots is not an advanced manufacturing system if those machines aren't backed by a robust control plan, documented

standard work, and a team that knows how to spot the first sign of process drift. If we want these large investments to actually move the needle for the region, we have to stop talking about "jobs" as the primary metric and start looking at whether the local manufacturing base can sustain the high-precision requirements of modern aerospace production.

Naming the Trap: The Capability Illusion

I call this **The Capability Illusion**. It is the common mistake of believing that sophisticated equipment or a large capital expenditure automatically translates into operational excellence. In many industrial projects, we see "shiny object" syndrome where the focus stays on the high-tech machinery while the foundational elements—the "boring" stuff like Gage R&R studies, layered process audits, and clear escalation paths—are ignored until something goes wrong.

In the context of Advanced Air Mobility (AAM), this gap is particularly dangerous. You can have a world-class assembly line for aircraft components, but if your local suppliers cannot provide parts that meet tight tolerances consistently, or if your internal team lacks the discipline to maintain those tolerances through high-volume production, the investment won't yield results.

The Capability Illusion	The Operational Reality
"We have state-of-the-art robotics."	"Do we have a maintenance schedule that prevents drift?"
"The local workforce is growing."	"Is the work being performed to an audited standard of work?"
"We are building for the future."	"Can we produce 1,000 units with the same precision as the first ten?"

A machine doesn't care about your investment goals; it only follows its programming. If that program isn't supported by a culture of quality, the equipment is just an expensive way to make mistakes faster. We must move past the allure of "new" and focus on the discipline of "consistent."

Why Great Investments Still Stumble (The Local Context)

When large-scale projects like the Ohio facility face hurdles, they are rarely caused by a lack of money or ambition. They fail because of a disconnect between high-level planning and shop floor reality. Often, these projects hit three specific walls: supply chain bottlenecks, skill mismatches, and integration gaps.

Take the local supplier network as an example. A primary manufacturer might be ready for aerospace standards, but their local tier-two suppliers may still be operating on "tribal knowledge" rather than documented processes. If a component doesn't meet its spec because a sub-supplier skipped a step in their process—not out of malice, but because they didn't have a clear instruction sheet—that is a failure of integration.

Furthermore, there is often a gap between academic planning and the reality of a 24/7 manufacturing cycle. A plan that looks great on a spreadsheet doesn't account for what happens when an operator on the third shift finds a workaround because the "official" way was too cumbersome to follow. When we

see these projects stall, it’s usually because the transition from prototype to high-rate production revealed that the underlying processes weren't actually robust; they were just lucky enough to work during the testing phase.

What This Cost You (The Ripple Effects)

When a project falls into **The Capability Illusion**, the costs aren't just abstract line items on a balance sheet. They manifest as tangible, painful problems in the production cycle. We can categorize these impacts using three primary drivers:

1. **Stalled Scalability:** A process that works for ten units but fails at 100 is not a scalable process; it’s an accident of small numbers. Without rigorous standard work, every new unit becomes a gamble on whether the previous "hacks" will hold up under volume.
2. **The Remediation Tax:** When defects are caught too late—or worse, aren't caught at all until they reach the customer—the cost to fix them is exponential. This includes the time spent on non-conformance reports (NCRs), the waste of raw materials, and the logistical headache of reworking parts in a complex assembly chain.
3. **Erosion of Trust:** Every time a project misses a milestone due to "quality issues," trust with investors, regulators, and customers thins. This is harder to rebuild than any piece of equipment.

The difference between a successful launch and a stalled program often comes down to whether the team chose the hard work of establishing discipline early on or the easy path of hoping that "good enough" would be sufficient for now. The latter almost always leads to an expensive, public failure later.

Making Quality Part of the Economic Operating System

To move past these hurdles, we must treat manufacturing maturity as a core component of the economic infrastructure. We cannot view quality as a "check" at the end of the line; it must be treated as a fundamental input for growth. To do this, I recommend focusing on three pillars:

1. **Verified Supplier Integration:** Don't just audit your suppliers' capabilities; audit their *process stability*. This means looking for evidence of layered process audits and documented reaction plans at every tier in the supply chain.
2. **Standard Work as a Baseline:** Every task must have a "known good" way to be done, which is then measured against that standard daily. If an operator has to make a choice about how to perform a step, the system is failing.
3. **The Accountability Loop:** Move away from just tracking "pass/fail" rates and start measuring "detection points." How many defects were caught by the process before they reached the next station? This identifies where your controls are working and where you need more investment in training or tooling.

By integrating these elements, we ensure that growth isn't just a spike on a graph, but a sustainable increase in capability. We aren't just building airplanes; we are building an industrial ecosystem capable of sustaining high-precision manufacturing for years to come.

Actionable Steps for the Plant Leader

If you are managing a facility within this new landscape—or if you are overseeing suppliers who must meet these standards—you can start making changes on your next Gemba walk:

- **Audit the "Why":** Next time an operator tells you they took a shortcut, don't just tell them to follow the procedure. Ask why the procedure was hard to follow. Is it because of poor tools? Lack of training? A confusing work instruction? Fix the root cause.
- **Map Your Critical Controls:** Identify the top five points in your process where a failure would be catastrophic or extremely costly to fix. Ensure these specific steps have redundant checks and clear, visual "go/no-go" criteria for the operators.
- **Establish Cross-Sector Metrics:** Move beyond just tracking "units per hour." Start measuring "first-pass yield," "mean time to repair," and "process stability indices." These metrics tell you if your system is healthy or just moving fast toward a cliff.
- **Formalize the Training Pipeline:** Create a bridge between local technical schools and the shop floor. Ensure that new hires aren't just learning how to operate a machine, but are being trained on the "why" of quality—the importance of torque specs, the necessity of clean zones, and the value of honest reporting.

The Long Game: Sustaining Growth Through Process Discipline

The ultimate goal isn't simply to get an aircraft off the ground; it is to build a manufacturing base that can reliably produce them every day for the next decade. This requires moving from a mindset of "project completion" to one of "process discipline."

Investment gets you into the game, but only disciplined systems allow you to stay there. We must move away from celebrating the ribbon-cutting and start celebrating the days when a process stays in control despite changes in shift, materials, or volume. When we treat quality as an integral part of the economic operating system—rather than an optional luxury for the "extra" projects—we create a sustainable path forward.

Success in this new era isn't found in the size of the initial investment; it is found in the depth of the systems built to protect that investment from the inevitable pressures of growth. Let’s stop building just enough to get by and start building the discipline required to lead.

Call to Action

What hidden dependencies are slowing down your supply chain's ability to scale? Share this newsletter with the leaders who need an honest diagnosis of their industrial ecosystem.

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

Stay curious, stay improving,

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References: Electra’s new Ohio 96-acre facility to build 800 hybrid-electric aircraft yearly (Interesting Engineering)