

Building World-Class Manufacturing: The Ohio Model

How strategic partnerships localize the next generation of advanced air mobility.

Manufacturing Strategy · Advanced Air Mobility (AAM) · Supply Chain Localization · Industrial Clusters

The newsletter for operations leaders who prefer localized, verifiable supply chains over nationalized risk assumptions.



The State of Play: What is Happening in Ohio?

There is a lot of noise right now about Advanced Air Mobility (AAM). For some, it sounds like science fiction—electric aircraft flying over cities and hopping between urban hubs. But for those of us who manage production lines and assembly floors, the interest isn't in the "magic" of flight; it's in the reality of manufacturing something that complex at scale.

The recent announcement of an \$850 million investment to build a massive manufacturing hub in Ohio is a significant signal. This isn't just one company trying to carve out a niche. It is a concentrated effort involving heavy hitters: Electra, RTX, GKN, and Doncasters. These aren't names you find on the sidelines of innovation; they are established players who understand what it takes to move metal, ensure precision tolerances, and manage high-stakes aerospace components.

When these companies join forces in one geographic footprint, they aren't just sharing a zip code. They are building an industrial base for AAM that can actually handle the "heavy lifting" of production—

meaning manufacturing processes that meet rigorous aerospace standards while maintaining the speed required for modern demand. For the plant manager or the quality engineer, this means moving away from experimental prototypes and toward high-volume, repeatable manufacturing reality. The investment isn't just in airplanes; it's in the machines, the tooling, and the localized infrastructure required to build them without the typical growing pains of a fragmented supply chain.

Anatomy of an Industrial Cluster

We often see companies try to solve production problems by simply finding "better" suppliers further away. They think that if they can just find someone who can hit their specs, the problem is solved. This leads to what I call **The Fragmentation Trap**.

In a fragmented model, you have several independent vendors who are great at their specific jobs but don't talk to each other. If your motor supplier has a delay, it doesn't matter how well your frame manufacturer is performing; the final assembly line stops. The "trap" is believing that individual excellence in separate locations equals success for the final product.

The Ohio model moves away from this by creating an integrated industrial cluster. This isn't just about proximity; it's about shared capability and reduced friction between the hand-offs on the floor. In a cluster, the "hand-off" happens over a fence or down a hall rather than across an ocean.

Feature	The Fragmentation Trap (Old Way)	The Integrated Cluster (Ohio Model)
Logistics	High risk of transit delays and port bottlenecks.	Localized, predictable "just-in-time" delivery.
Communication	Transactional; problems are solved via email/phone.	Collaborative; issues are caught at the point of assembly.
Risk Management	Isolated; one supplier's failure halts the whole line.	Distributed; shared capacity and local redundancy.
Quality Control	Verified after parts arrive from distant sources.	Validated during the integration process locally.

By choosing a cluster, these companies aren't just buying "near" components—they are building a system where the manufacturing steps are physically and operationally linked to reduce the chance of a downstream failure stopping production.

Why Localization Matters: The Supply Chain View

We've all sat in those meetings where we have to explain why a project is stalled because a single, specialized component is stuck on a ship three thousand miles away. It's frustrating for leadership and even more painful for the folks on the floor who are watching machines sit idle while they wait for parts that "should" be there.

The move toward localization in AAM isn't a trend; it's a necessity of physics and economics. When you are building high-complexity aerospace products, your margin for error is razor-thin. If a specialized casting or a precision-machined housing fails an inspection, you can't wait six weeks to source a replacement from overseas. You need the ability to pivot, to rework, and to verify in real-time.

Localization means moving the "source of truth" closer to the point of assembly. When your key partners—like GKN or Doncasters—are part of an integrated local network, the feedback loop is shortened. If a tolerance starts drifting on a component produced three miles away, you can catch it before it ever makes its way onto your final assembly line. It changes the role of the supply chain from a "delivery service" to an "extension of your own floor." We aren't just trying to get parts faster; we are trying to build a manufacturing environment where the distance between a problem and its solution is as small as possible.

The Recipe for Resilience: Three Pillars of Local Growth

To move away from the "fragmentation" model, manufacturers must intentionally design their operations around three specific pillars. This isn't about just hiring more people; it's about how those people and machines are organized to ensure the line never stops unexpectedly.

1. Shared Capital Investment

Instead of every company building its own redundant machine shop for a single specialized process, they pool resources into shared infrastructure. In the Ohio model, this means investing in high-end machining centers or specialty coating facilities that serve multiple partners within the cluster. This ensures that if one partner experiences a surge in demand, there is local capacity to absorb it without needing to "outsource" to an outside party who doesn't understand the specific quality requirements of the project.

2. Vertical Integration by Design

This means bringing manufacturing steps closer together in the production sequence. Rather than shipping a half-finished component across state lines for the next stage of assembly, the work is performed in a continuous flow. This reduces "work-in-progress" (WIP) inventory and minimizes the number of times a part has to be unpacked, inspected, and repacked. It keeps the product moving toward its final form with fewer interruptions from logistics.

3. Talent Ecosystem Commitment

You can't build an advanced manufacturing hub without a local workforce that understands the craft. A commitment to a "talent ecosystem" means training programs, apprenticeships, and retention strategies that keep skilled operators—the people who know how to calibrate the CNC machines and interpret the blueprints—in the region. When your neighbors are also invested in this talent pool, you create a stable environment where expertise stays local rather than being poached by distant competitors.

Practical Steps for Your Facility Tomorrow

You don't need an \$850 million investment or a new aircraft line to start thinking about these principles today. You can begin identifying the "friction points" in your own operation that are caused by distance and fragmentation.

Identify your "High-Risk, High-Distance" components. Look at your current production schedule and highlight every part that comes from more than a few hundred miles away. These are your primary sources of risk. Ask yourself: *If this part is late or out of spec tomorrow, what happens to my line?* If the answer is "the line stops," you have identified a point where you need to move toward an integrated model.

Map your local radius. Look at the manufacturers within a 50-mile radius. Are they just suppliers, or could they be partners? Reach out and see if there are shared capabilities—like specialized heat treatment, precision grinding, or heavy machining—that you both need but would only have to manage once if you collaborated on a "cluster" approach.

Simplify the hand-off. Audit your current intake process for components from distant suppliers. Every time a part is unpacked and re-inspected because it came from a different facility, you are losing money in labor and time. Work toward a goal where "receiving" means simply moving an item to the next station on the line, not starting a new inspection process because the previous stage happened too far away.

Audit your "Wait Time." Track how many hours of man-hours are lost per month due to parts being in transit or stuck in logistics loops. Use that number as your internal business case for moving toward more localized, integrated sourcing. When you can show a manager exactly how much it costs to wait for a part from across the country versus having a local partner handle that step, the decision to change becomes about math, not just preference.

Call to Action

What local industry investments are defining your region's future? Share this issue with a regional peer who needs to see it.

Newsletter replies: newsletter@sixsigmakaizen.com · X: [@kaizen_6sigma](https://twitter.com/kaizen_6sigma)

Stay curious, stay improving,

David Rodgers

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References: Electra builds \$850M manufacturing plant in Ohio (Manufacturing Dive)