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Built for Volume, Bought for Variance

Why defense readiness is an architecture problem — and why the manufacturers most successful in commercial markets are often the least prepared for what defense programs actually buy.

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There is a paradox at the center of defense supplier readiness that almost no one names directly. To succeed in defense, a manufacturer must become more rigid and more nimble at the same time. More rigid, because configuration control, traceability, and audit-ready documentation tolerate no improvisation. More nimble, because defense work arrives in low volumes, high mix, and constant motion — engineering change orders mid-program, DFARS updates mid-contract, quantities that would not justify a single shift in a commercial plant. Most readiness conversations treat these as separate hurdles. They are not. They are two faces of a single question: is the organization architected for the work it is about to pursue?

The inheritance problem

Michigan's manufacturers are not unprepared because they lack capability. They are unprepared because they are superbly prepared for something else. Decades of commercial success — particularly in automotive — optimized these firms for high-volume, low-mix production: long runs, stable designs, relentless cost-down, and quality systems built around statistical control of repetition. That optimization is an asset on the balance sheet and a liability in the proposal room. Defense programs buy the opposite profile. They buy variance: small lots, frequent configuration changes, exacting provenance, and the ability to prove — not merely assert — that every deviation was authorized, documented, and closed. A firm built for volume does not become a firm built for variance by purchasing a certification. It becomes one by rewiring how decisions, information, and accountability move through the organization.

Nimbleness is structure, not culture

When organizational agility comes up, most executives reach for cultural language — mindset, buy-in, hustle. The more useful frame, and the one taught in serious organizational design work, is structural: nimbleness is a property of how an organization allocates decision rights, routes information, and manages change. Culture matters, but culture is downstream of architecture. A shop where every nonstandard decision waits on one owner-operator is not agile, no matter how energetic that owner is; it is a single-threaded system with a hard capacity limit. A shop where process knowledge lives in three veteran employees' heads is not resilient; it is one retirement away from losing its ability to demonstrate compliance. These are architecture facts, and architecture facts have a property that culture claims do not: they can be observed, scored, and remediated.

Three failure modes primes see before you do

The first failure mode is concentrated decision rights. Defense programs generate a steady stream of decisions — deviation requests, corrective actions, flowdown interpretations — that must be made quickly and documented completely. When all of them route through a single principal, cycle time stretches and documentation thins precisely when a program office is watching most closely. The second is tribal knowledge. Commercial customers accept results; defense customers audit process. Undocumented know-how, however excellent, is invisible to an auditor and nontransferable in a crisis. The third is information architecture that cannot produce a trail. Many mid-tier firms run capable ERP and quality systems that were configured to answer commercial questions — cost, yield, delivery — and cannot reconstruct, on demand, which material lot, which drawing revision, and which authorized hands touched a given article. Nothing about that firm's craftsmanship is deficient. Its architecture simply cannot testify on its behalf.

The good news: architecture is assessable

Here is what the compliance-first framing misses: every one of these failure modes is measurable before a dollar is spent chasing defense work. Decision rights can be mapped. Documentation depth can be sampled. Traceability can be tested against a live work order. This is precisely why our Defense Expansion Pathway™ assessment treats organizational architecture as inseparable from technical readiness — the domains covering traceability and configuration control, program execution and schedule discipline, and purchasing system readiness are, at bottom, architecture examinations. They ask not whether a firm is good at making things, but whether the organization around the making can absorb variance, survive an audit, and keep its commitments when the design changes for the third time. A supplier who knows these answers early can sequence investment rationally. A supplier who learns them from a prime's assessment team learns them at the most expensive possible moment.

The decision this enables

None of this argues that every commercial manufacturer should retool for defense. Some architectures should stay optimized for volume; that is a legitimate strategic choice, and an honest advisor will say so. The argument is narrower and more useful: the question of whether to enter defense is answerable with evidence, before commitment, at the level where the real risk lives — the organization's wiring, not its equipment list. The defense industrial base does not need more suppliers who bought certifications. It needs suppliers whose organizations were deliberately architected for the work — and a candid way to tell the difference.

Primes do not buy your machines. They buy your organization's ability to keep promises under variance.

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