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In This Issue
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What Defense Primes Are Really Buying

by Rich Sorelle, President and CEO, Spectrum Control



I spent the first half of my career on the other side of this conversation. I started at Grumman working on Navy aircraft programs, including the F-14D, A-6F, and EA-6B Prowler. Then twenty years at ITT, later Exelis, most of it in electronic warfare. In those jobs, I was the customer. I wrote requirements. I sat in source selections. I decided which suppliers made the cut and which ones did not.

When I started out as an engineer and program manager, a system meant multiple boxes, each box with multiple boards, and multiple chips on every board. Today that same capability fits on a single chip. That is still really mind-boggling to me.

What has not changed is that somebody at a prime is deciding which supplier to trust. What has changed is what that decision turns on.

Here is something you learn after enough years in this business. Most standard products are standard because somebody designed them into a program once and they stuck. That makes a catalog a very good record of what the last generation of programs needed. It tells you very little about the next one, and the next one is what is being funded right now.

This is not a normal cycle

Defense investment is accelerating across the United States and Europe. At The Hague last year, NATO members committed to 5 percent of GDP by 2035, with 3.5 percent against core defense requirements, which is the part that buys hardware. Two things are happening at once, and they ask different things of a supplier. Existing inventories have to be replenished, and that is mostly a matter of rate and schedule relative to existing designs. At the same time, the next generation of platforms and the upgrades to current ones are being shaped by new threats and lessons from ongoing conflicts. On that side, requirements move while programs are already running, which means a supplier who can only quote a catalog part is going to lose.

At the platform level, customers want more sensing, more connectivity, more electronic protection, and faster decisions, in less volume, at lower weight and power, with higher reliability, and at a price that closes their business case. That is a tall order, and everyone in this industry knows it. For those of us down the supply chain, I think it requires us to reconsider what it means to be a good supplier.

Specifications are the price of admission

In RF and microwave, we love specifications, and we should. Frequency range, power, noise figure, linearity, insertion loss, size, weight. These determine whether a system works. There is no substitute for good engineering talent, and there never will be. But when I was on the prime side, the questions that actually decided an award came after the datasheet. Can you fit that performance into the space I have? Can you integrate more of the RF chain so I do not have to? Can you modify it to my electrical, mechanical and environmental requirements? And once we get the design right, can you build enough of them, on time, when I need them?

At Spectrum Control, we have organized ourselves around those questions. Internally, we talk about it as innovate, adapt, and deliver. Three words are easy to say. Doing all three at the same time is not. A supplier that can innovate but cannot adapt becomes a bottleneck. A supplier that can adapt but cannot deliver becomes a schedule risk. And a supplier that delivers yesterday's technology faster is not solving tomorrow's problem.

continued on page 10

continued from page 9

We hear customers asking for more capability in less space. Adding another box is usually not an option. Neither is adding power, cooling, or weight.

Miniaturization matters, and it matters more every year. But the greater value is usually integration. Every function we integrate is one the customer does not have to design, qualify, and manage. That is engineering time they get back, which means cost they do not spend, which means a capability that reaches the field sooner.

We have put serious engineering effort into integrating RF and digital functionality, reducing SWaP-C, and moving from individual functions toward highly integrated assemblies and subsystems. None of that counts for much if it stays in the lab. We released six times as many new products in 2025 as in 2022, and that is the metric we watch, because a portfolio that is not turning over is a portfolio that is falling behind.

I said at the start that a catalog is a record of what the last generation of programs needed. Here is what that means in practice. Every program is trying to meet a mission-focused specification, and a catalog part was built for someone else's mission. Sometimes it had already been adapted once for a different mission before that. The further you get from the mission it was built for, the less well it fits.

So we built the company around that reality rather than around the catalog. We sell standard products and we always will. But derivative and custom work runs across the portfolio, including lines that look like pure catalog from the outside. Our design process assumes it. Our manufacturing process assumes it. That is a deliberate choice, and it is why a customer can bring us a requirement that does not exist yet and get an answer they can build a proposal around.

That takes more than engineering talent. It takes an organization that is comfortable listening, responding quickly, and making decisions close

to the customer. Delivering is what I would put first, and I think our industry has underinvested in it for a long time. For years, manufacturing capacity got treated as an operations problem, planning work that somebody handled as a second job on top of their real job. That is hard to do well, and I understand how it happened. But it cannot be that going forward.

Governments are sending clear demand signals. Primes are being asked to accelerate. But a prime can only ramp as fast as its supply chain allows, and that responsibility travels all the way down the chain to us.

When you think about what it takes to ramp up, most of it isn't glamorous.

Our customers need suppliers who understand the mission, the platform, and the program, including all its complex requirements.

It is people, equipment, and the information systems that tell you where you are spending, where you are not spending, and where you should be spending. On equipment, we have been investing across every plant we run. New equipment in Pennsylvania, Massachusetts, Michigan, Mexico, and across our operations in the UK.

The people side is the one I think our industry seriously underestimates. Consistent, dedicated employees create customer value. Manufacturing turnover runs 25 to 30 percent across our industry. Four years ago we were right there with everybody else, at about 30 percent.

Last quarter we were at 5 percent. You cannot properly service a customer or sustain a production ramp at 30 percent turnover. You cannot sustain qualification discipline, audit trails, or first-pass yields if the operator who knew how to run the process left in March. Workforce stability is really a capacity

investment, and it does not appear on anybody's datasheet or balance sheet.

It also means concentrating the manufacturing footprint where the real capability exists, because a footprint spread too thin is less efficient, which means it costs more and makes us less competitive going forward. And it means designing for manufacturability from day one, not discovering it in production or at rate. None of what we did to transform the company was painless, but it was necessary because waiting for the purchase order to arrive before thinking about capacity is waiting too long.

Some of the plants in this industry have been building the same kind of hardware since the Second World War. There are people on our floors today with forty years in, forty-one, forty-two. That legacy is worth something, but it does not entitle anybody to the next program. Our customers need suppliers who understand the mission, the platform, and the program, including all its complex requirements. They also need suppliers who understand the specifications.

At the end of the chain there is a warfighter who did not choose the specification, the schedule or the budget. Less than one percent of the American population wears a military uniform. That one percent is not only defending the homeland and the people in it. They are defending an economy. Sea lanes, shipping, chokepoints like the Strait of Hormuz. Most of us depend on all of it every day and never really think about any of it. They put it all on the line for our way of life, and they deserve the best technology we can design, build, and deliver, at a speed that matters. We owe it to them. That is the standard I think our industry should be working toward, and it is the standard we are working toward at Spectrum Control. 

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