



Aviation Week Executive Roundtable: Identifying Critical Issues for Supply Chain Executives

*Recorded by Jeff Meredith
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Aviation Week convened its third Supply Chain Executive Roundtable on July 13 in Washington, DC. The Aviation Week Executive Roundtables are designed to bring together industry leaders in an open setting to identify issues, discuss plausible solutions and identify priority actions to move forward. The goal is that in so doing, the group will guide individuals and organizations toward actions that improve performance across the aerospace and defense industry.

Sponsored by Dassault Systèmes and Software AG, the roundtable drew attendees from BAE Systems, Boeing, Corning Specialty Metals, Energy Dynamics, L-3, Lockheed Martin, Mnemonics, Montana Metal Products, Northrop Grumman, Parker Aerospace, Plexus Corp., Pratt & Whitney, Raytheon, Rolls-Royce and Triumph Aerostructures.

During the course of the roundtable, attendees discussed three key issues:

- Opportunities within the global supply chain to enhance affordability: affordability should be emphasized early in the design phase, which must involve manufacturing engineers. There must be earlier supplier engagement (pre-proposal, pre-RFP) to enlist their support in building an affordability strategy.
- Significant risk is attached to the industry's use of single-source suppliers; a natural disaster/shutdown of a key supplier can cause a shortage of critical parts and disrupt the supply chain. Recent events have brought the model of just in time manufacturing into question.
- A&D companies must retool job descriptions, career paths & salary levels to make the supply chain function attractive to potential hires.

While companies have emphasized single-source supply for low cost, supply chain disruptions - shutdowns of key suppliers due to financial difficulties or natural disasters - are causing executives to re-evaluate. Roundtable attendees discussed whether A&D companies should do second sourcing deals to safeguard against uncertainty.

Senior supply chain executives still expressed concern over the financial viability of the supply base; some shared the worst case scenario of having a single source supplier go bankrupt or having tooling padlocked in a shuttered facility. Supplier warning signs include delivery & quality issues, changes in key personnel, high employee turnover, and delays in paying their suppliers.

Attendees considered the degree of supplier and global supply chain coordination required to meet affordability needs. Target cost estimates must be objective and realistic to avoid program cost growth and affordability must be considered when there are changes to supplier requirements or design; the cost impact of these changes must be considered before changes can be approved. Attendees noted that the use of "red" (at risk) suppliers drives cost and risk. Some cost factors remain outside the industry's control - i.e., government customers have not always grasped that higher production quantities would allow prices to come down.

Attendees agreed that companies must shift from a traditional sourcing criteria (cost, on time delivery, quality) to one that addresses "total cost" - or the overall value proposition that is offered.

Additional findings from the roundtable follow.

Risk Mitigation: Single Source Suppliers Still Put Industry at Risk

Recommendations/Opportunities:

- There is an opportunity for government/prime/sub collaboration to develop alternate suppliers (i.e., SBIR funding).
- In assessing the financial health of the supply base, it is important to capture both qualitative ("rumor") and quantitative data points.
- In assessing financial risk, executive relationships are key in capturing early indicators.
- Eliminating or minimizing the use of brokers can reduce the likelihood of counterfeit parts.

Challenges:

- Business continuity is not taking precedence in supplier selection (70% single source).
- The cost to qualify a second supplier can be prohibitive.
- Customers expect the prime to bear the costs of business continuity.
- Having the discipline to say no and not on-board at risk suppliers.

Affordability: Emphasize During the Design Phase, Involve Manufacturing Engineers and Engage Earlier With Key Suppliers

Recommendations/Opportunities:

- Emphasize affordability early in the design process (Make DFMA - Design for Manufacturing and Assembly - a practice).
- Get manufacturing engineers involved in the design process, engage with chief engineers.
- Flow down contractor obligations to meet \$ targets; Flow down unit cost as design requirement.
- Support joint lean/continuous improvement activities. Send lean teams into suppliers to aid affordability efforts.
- Must consider transition into production earlier in development process: Build affordability initiatives into contract.
- Stop scope creep: Establish a baseline and use a disciplined process for change.
- Get all suppliers simultaneously invested in prime affordability targets.
- Need to factor in technology readiness levels, manufacturing readiness levels in affordability targets.
- Align supplier target prices with should costs: Establish a baseline and how to get there.
- Model total lifecycle cost.
- Cross functional engagement for "design for manufacturability."
 - Engage chief engineer.
 - Engage concurrent engineering early with supply base.
- Earlier supplier engagement (pre-proposal, pre-RFP) to enlist their support in building affordability strategy and shaping market.
- Increase utilization of standard industry certifications (i.e. ASQ100, NADCAP - National Aerospace & Defense Contractors Accreditation Program, etc.).
- Flowing buying power to the suppliers (leverage commodity buys).
- Critical evaluation of necessity & sufficiency of all deliverables (subcontract data requirements list).

Challenges:

- Schedule & forecast instability.
- Companies tend to lose sight of the cost of customers' sustainment.
- Clear requirements definition & statement of work needed.
- Engineering focus/culture more on design than cost/affordability targets.
- Lack of a firm requirements baseline.
- Government acquisition strategies & unwillingness to merge lots.

Strategic Sourcing & Supplier Assessment

Recommendations/Opportunities:

- In determining which suppliers will be considered in the source selection process, companies should consider past performance, capability match/alignment of requirements, and the criticality/complexity of the item. Long term relationships are also valued (more than just price).
- To ensure that suppliers have the necessary capability (i.e., engineering, manufacturing, quality and support processes), companies should conduct capacity analyses, rate readiness reviews and examine supplier infrastructure (i.e. above the shop floor technical capability, supplier management, internal capabilities vs. subcontracting).
- Utilize internal & external resources to vet and ensure supplier capability
- Benchmark performance with other customers as well as your own experience with the supplier.
- Assess how well suppliers understand your “total business” - not just the specific aspects of the item sourced.
- Companies should not constantly chase the lowest price since there are startup costs associated with on-boarding a new supplier.

Challenges:

- Understanding tier 2 supply base, particularly when that tier is commercial suppliers (i.e. management of COTS).
- Ensuring a holistic approach to assessments, selection & communications.

Talent Acquisition & Development: There is a Need to Retool Job Descriptions, Career Paths & Salary Levels to Attract the Right Talent

Recommendations/Opportunities:

- Companies must increase the use of internships and also follow up with participants (who often spend a summer at a company and never return).
- Use A&D professional organizations to market supply chain opportunities and educate potential hires.
- Introduce supply chain at the high school level: Sponsor projects/competitions
- Provide a model of required skill sets to help universities produce the supply chain talent the industry needs. Work directly with universities to provide curriculum input, both at the undergraduate and master’s level.
- Retool job descriptions, career path & salary to attract talent.
- Rotational assignments are crucial to making the job interesting.
- Pay for APICS (Advancing Productivity, Innovation, and Competitive Success) classes.
- Foster discipline education in the supply chain: What does each function do & how do they fit together?

- There is a need to transition manufacturing engineers into the supply chain.
- Work-life balance programs can aid with employee retention.

Challenges:

- Generational expectations are often at odds with the A&D career path: New hires want to move into managerial functions more quickly.
- Money is always an issue. The Supply Chain function needs a comparable pay grade.
- Supply Chain needs an image makeover: Emphasize job's value to entire enterprise

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