

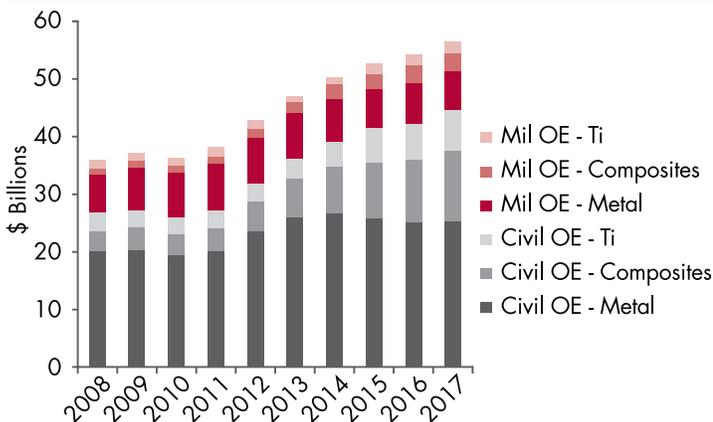
# SUPPLY CHAIN EVOLUTION: GROWTH AND CHANGE IN THE AEROSTRUCTURES INDUSTRY

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*The outlook for aerostructures providers continues to be strong, bolstered by unprecedented demand for new commercial aircraft.*

*Though the present growth cycle is moderating, as evidenced by a declining rate of acceleration in deliveries, the strength of the current order book, coupled with three main market shifts, should provide more than enough opportunity for supplier EBITDA growth.*

## AEROSTRUCTURES MARKET TRAJECTORY



Source: Counterpoint Market Intelligence, Avascient Analysis

Cyclical growth, however strong, is not the only story playing out across the aerostructures sector. Even as firms ramp up production, this segment is undergoing three significant changes that will fundamentally reshape it for decades to come.

1. Work is migrating from traditional geographic centers to new locations, driven by a desire to reduce costs and secure access to new markets.
2. Firms across this segment are taking the opportunity to significantly upgrade their operations, not simply expand capacity.
3. The historically fragmented aerostructures market is starting to see real consolidation, driven as much by OEM pressure as by attractive financial opportunities.

The result of this transformation will be a leaner, more efficient supply chain for structural parts and assemblies—one that is more profitable for firms occupying the middle tiers. These changes will take many years (possibly more than a decade) to be fully realized, but savvy companies are moving now to build a foundation for these critical market shifts.

### 1. MIGRATION OF WORK TO NEW GEOGRAPHIES

The migration of structures work to new countries is not a novel concept. Boeing, for example, has sourced aerostructures from the Japanese heavies for decades. But past incentives for relocation have largely been political, driven by the need to gain market access and position for winning lucrative contracts with important carriers. In such cases, OEMs were less motivated by potential cost advantages. Now however, with a renewed drive by OEMs to reduce costs across the supply chain, structures firms are taking a fresh look at their global footprint. Companies based in the US or Western Europe, in particular, are evaluating (or have already begun) operations in Asia, Mexico, Eastern Europe, or other lower-cost locations.

Under this renewed push, firms are looking first at the portion of their work that contains the highest percentage of touch labor cost (e.g., composite hand lay-up and sheet metal fabrication). The corollary to this logic is that US and Western European manufacturing plants should focus on capital-intensive, automated manufacturing processes. This is indeed taking place, as evidenced by the investment in automated tape laying and

automated fiber placement machines, made by composite structures suppliers like HITCO and GKN, at their US and UK facilities, respectively.

Meanwhile, though labor rates in places like Asia, Mexico, and Eastern Europe are obviously lower than the U.S. and UK, the key figure is labor cost per unit, which incorporates productivity factors. Success here will depend on the development of real manufacturing clusters and the development of competitive local skill sets. While individual initiatives will carry some level of risk, in aggregate the satisfaction of these basic conditions is only a matter of time and invested capital. Chihuahua City, Mexico is an example of a low-cost location that is developing a significant aerospace cluster, with 36 plant openings since 2007 including sites for Fokker Aerostructures and Manoir Aerospace.

Firms have been relatively cautious to date in relocating manufacturing to emerging markets, meaning significant cost savings have yet to be realized. For example, only 2% of Spirit Aerosystem's roughly 15 million square feet of manufacturing space are located outside the US or Western Europe. The figure for Triumph Group is comparable, while LMI Aerospace stands at the high end of the range with just under 10% of its total capacity outside of these higher cost areas. Firms are experimenting with new sites, trusting them with a fraction of the company's total turnover to see what "sticks" and to see what the total cost picture will look like.

## 2. FIRMS UPGRADING THEIR OPERATIONS

Irrespective of location, across the board there has been significant organic investment in capacity and new aerospace manufacturing capabilities. For example, last year GKN opened a new site in Filton, UK to focus on wing structure design engineering. LMI recently expanded its Savannah, GA facility in anticipation of growing demand for its kitting services. Other companies are focusing on streamlining their operations, such as Triumph's structures site in Nashville, TN which introduced new tooling and statistical process control to wring cost out of its wing stringer and panel production. ADI of Valencia, CA completed a \$100M expansion in 2012 to support its titanium machining operations for the 777, 787 and A350 programs.

In addition, smaller firms, especially those recently acquired by private equity, are taking steps to build out their management teams and sales staffs, or invest in IT capabilities (e.g. enterprise resource planning/materials requirements planning) to appeal to the more discriminating OEMs like Airbus.

In addition to these upgrades, there is room for further improvements in the operations area. Many firms, especially those which have made recent acquisitions, stand to gain from facilities consolidation and rationalization. Companies like Triumph Group, PCC and United Technologies have yet to take serious steps to rationalize their operations, and can improve future margins by consolidating work in fewer locations. This activity may have to wait until after cycle peak, however, as these firms are focused on meeting rate requirements and capturing as much market share as they can.

## 3. CONTINUED CONSOLIDATION

Unlike other segments such as engines, avionics, or landing gear, which are controlled by a small group of powerful players, the structures market is comprised of more than one hundred companies populating three semi-distinct tiers of production. Many of these firms are small, private companies or divisions of larger, diversified companies with a potentially capricious commitment to the commercial aircraft business. Reducing the fragmentation of this group affords advantages to both structures suppliers and OEMs, yet as shown below, the incentives of these two groups are not always aligned.

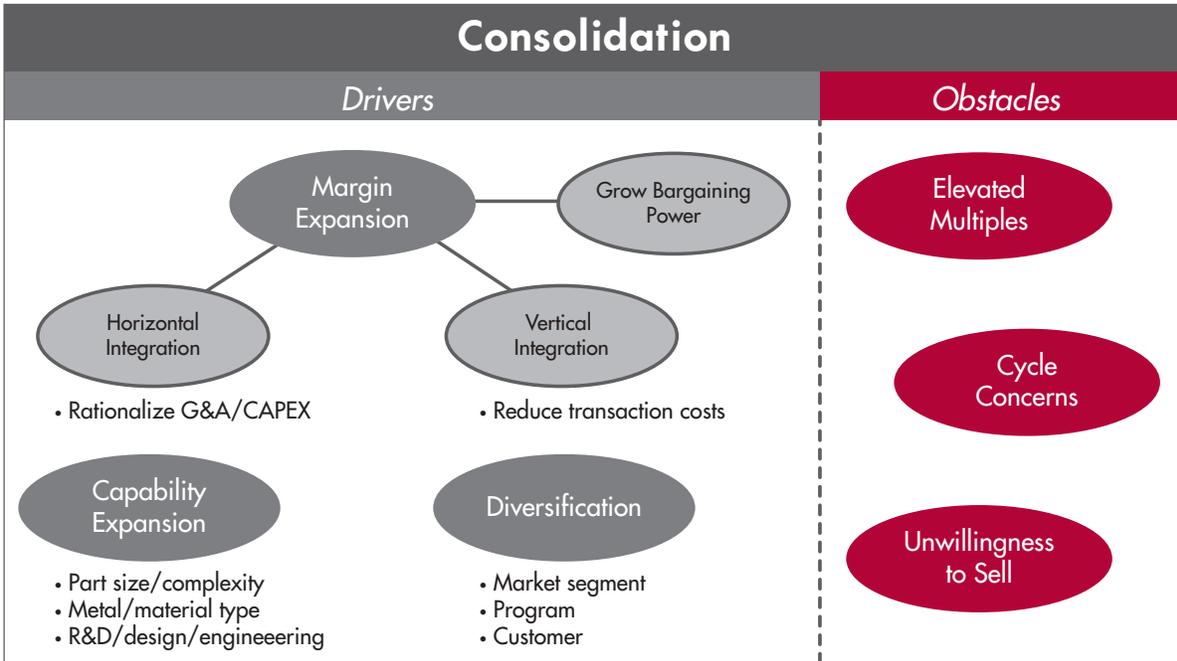
### *OEM-shared Incentives for Consolidation*

Both groups seek to simplify and rationalize their supply chains. Removing redundant G&A and CAPEX from the industry would improve overall profitability at a time when aircraft manufacturers will be hard pressed to find avenues for growth (perhaps four or five years from now). Vertical integration should further serve this goal by reducing certain transaction costs. For example, in 2012 Precision Castparts (PCC) acquired Klune Industries, a buyer of the company's own casting, forging and fasteners products.

Cost reduction can also be achieved by shifting the "stuffing" of structural components further down to a more cost-effective point in the value chain. Additionally, consolidation enables the pooling of financial resources, which increases supplier capacity to invest in R&D or build inventory in advance of a product launch.

### *OEM-neutral Consolidation Drivers*

Other consolidation drivers favored by suppliers are likely to be met with indifference by the OEMs. For example, many smaller players are in desperate search of opportunities to diversify their books of business, especially if they are overexposed to a single segment (e.g., military), customer (e.g., Beechcraft), or program (e.g., the C-17, for which production is scheduled to end in 2014). Many of these companies wish to diversify their capabilities base. Top items on the expansion agenda have included high-



speed machining and hard metal machining (titanium, Inconel™, niobium), as evidenced by PCC's 2012 acquisition of Synchronous. Other companies have expanded both up and down in part size and complexity, giving them the ability to act as a Tier I, II or III as the situation requires, and thereby garner greater content on the aircraft platforms they serve. LMI acquired Valent Aerostructures for this reason in 2012.

In some cases we see the addition or expansion of design capabilities as an attempt to shift away from the build-to-print model. These same firms sometimes supplement their offerings with value added (e.g. kitting) and supplier management services. Each of these is a bid by structures firms to take greater control of the product they supply and exert more influence on the environment in which they operate.

### Threats to OEMs

Some consolidation drivers pit the interests of suppliers against those of the OEMs. One example is bargaining power, which for the OEMs represents the downside of supplier scale. Though growing supplier scale helps the OEMs reduce overhead and redundancy throughout the supply chain, it reduces competition and raises the prospect that suppliers will attempt to expand margin through price increases. Reductions in price competition have already occurred at the materials level (e.g. aluminum, titanium), adversely affecting companies downstream. Structures firms will likely look to this model in the mid-term, to improve their margins. A smaller group of well-capitalized, diversified suppliers will be able to push back on OEM demands to a much greater degree

than is possible today. Currently, fixed price contracts commit suppliers to unfavorable and sometimes loss-making terms. For example, Spirit's 787-8 contract, which runs through 2021, caused the company to take a \$184M loss in 3Q12.

Though there are clearly many forces encouraging continued consolidation, obstacles also exist. Chief among these is the inflated level of valuations. Many buyers find 10-11x multiples absurd, especially at what some argue is near the top of the cycle. Other buyers are optimistic that they can find bargains at 5-6x; though finding companies at these prices, especially ones with pre-existing exposure to the commercial market, is extremely difficult. Lastly, some owners, especially those from families with a long history in the aerospace business, may simply be unwilling to sell. They have seen many cycles before and look forward to guiding their firms through at least a few more.

## 4. STRATEGY ISSUES TO CONSIDER

Structures firms should be actively developing strategies to cope with this changing environment. Three key issues should be considered in planning for the future:

### Global Competition Will Stiffen

- Competition from foreign sources will continue to grow in strength, but not entirely due to economic rationale. Political desire to secure a piece of the global supply chain will drive investments with low or even negative ROI; if established players in the US and Europe dismiss these, it will be at their peril.

- ➡ *All firms should develop tactics to preempt, participate in, or defuse the threat from new entrants, even if those new entrants appear to be poised to enter the market with a disadvantage in technology or labor cost per unit.*

### **Narrowbody Prospects are Keeping Multiples High**

- The excitement surrounding anticipated orders for the new narrowbody models (A320neo and 737MAX) is putting upward pressure on multiples. However, many of the companies benefitting from this boost to valuation are not truly positioned to win work on these programs. In other cases, incumbents well-positioned from a technical and past performance standpoint but disadvantaged on cost are factoring revenue into their pipelines that is on the verge of being stolen by new entrants.
- ➡ *Once those orders have been placed, buyers should have much better visibility into the future revenue picture for the properties they bid on. Targets with little to no neo or MAX content should trade down by the end of 2013, but could still offer many of the benefits listed above (e.g., reduced transaction cost, program diversification).*

### **Post-Peak Strategy**

- The current demand cycle is likely to peak in the next four to five years, if not earlier. Aerostructures firms should be thinking several moves beyond their near- to mid-term actions, incorporating a view of future demand and the impact on plant operations, resource allocation and profitability.
- ➡ *The answer to this question will differ for every company based on its unique situation, ownership status and long-term vision for its role in the aerospace value chain. Some firms may simply wish to sit tight, and perhaps pull back on capacity. Others will think through cash deployment: should the firm buy back shares or acquire customers and programs at a steep discount through M&A? Still other firms will consider expansion into other product types within the aviation supply chain such as actuation or electronics; these will be compelling as long as there are strong synergies at the product integration level or opportunities for cross-selling. Many firms may wish to diversify into other markets (e.g., industrial, oil and gas) – indeed we see many firms moving in this direction today.*

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## **ABOUT THE AUTHOR:**

**Bob Wiecezak** specializes in the development of acquisition and market capture strategies for firms in the aviation sector. His clients have included private equity investors, aerospace OEMs, tier 1 and 2 suppliers and NASA.

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