



## AVIATION WEEK EXECUTIVE ROUNDTABLE:

### Elevating Leadership, Innovation and Transformation

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***The AVIATION WEEK Executive Roundtable held Nov. 2 keyed in on three strategic issues: leadership, assuring innovation in the future, and business transformation. These three critical areas encompass a number of fundamental needs, ranging from shoring up the supply chain during a difficult economy to global alliances and interoperability to developing new business models to meet the changing requirements of space and defense customers.***

***This fifth annual Aerospace & Defense industry review was hosted by Chris Chadwick, President of Boeing Military Aircraft, and Tony Velocci, Editor-in-Chief, Aviation Week & Space Technology.***

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***In opening comments, Chadwick addressed the shifting environment in which industry leaders are operating, and the opportunity for significant steps in the near-term. Similarly, Velocci noted the change in senior leadership across the industry, the continued need for improved performance, and the volatility facing all portfolio and program executives.***

***The Executive Roundtable, sponsored by Siemens PLM Software, was attended by leaders from Airbus, Aviation Watch, Boeing, Bombardier, EADS North America, Goodrich, Honeywell Aerospace, Lockheed Martin, Raytheon, Rockwell Collins, United Launch Alliance, AAI Services, Suntron, Harris Corp., IBM, NASA and Northrop Grumman.***

Attendees incorporated comments from the first day of the A&D Programs Conference in their considerations. These included a review of near-term requirements from the Defense Dept., plans for future innovation and research within DARPA and NASA, and the economic forecast for the industry and airline customers for the near-term and through 2014.

These factors include:

- The Defense Dept. will require rapid-response solutions to evolving asymmetrical war threats, in addition to longer-term strategies. The overall Defense Dept. budget is escalating in terms of operations at the same time that the nation faces continued deficits, economic upheaval and the need to meet entitlement requirements.
- Program performance – whether space, commercial or defense – continues to be an issue. Problems and delays for anyone program ripple across the entire industry.
- The economy is causing several changes in terms of business model and supply chain.
  - A&D traditionally pays accounts receivable on better terms than the U.S. industrial base overall
  - Risk mitigation within the supply chain is resulting in investment in suppliers and/or outright acquisition of suppliers.

The Priority Findings for the Roundtable include:

- Individually or as an industry, the A&D industry needs to develop a fast-response business model to support emerging Defense Dept. needs.
  - Must be based on budget realities
  - Those supporting the response will need “running room” to experiment and make happen
  - Small teams are recommended and must include customers.
- The recent innovation study published in Aviation Week & Space Technology (Oct. 26 2009) provides an overview of current status; this status needs to be aligned and connected to global challenges – health care, energy, climate, security/defense, technologically literate workforce.
- Program management development efforts need to increase focus on leadership development
  - Evaluate an industry-wide apprenticeship program that goes beyond completion of courses and focuses on strategic leadership experiences
  - Assure geopolitical awareness in programming
- Continue to drive improvement in systems engineering, software development and development of core skills throughout the supply chain.
  - Identify current data/gaps in data
  - Identify gaps in skills, knowledge, critical expertise

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**Following is a summary of each work group's discussion leading to the aforementioned priorities.**

### **Industry Transformation**

During the Executive Summit, leaders agreed that now is the time to push forward with industry transformation, before a "near death" crisis emerges.

1. What do you consider the most significant gaps in people talent/skills?
2. What do you consider the most significant gaps in production capacity/capability?
3. What do you consider the most significant shortcomings in program performance?
4. What are the major obstacles to meeting customer requirements?
5. What are the three most meaningful actions the industry could undertake as a whole to address these gaps and shortcomings?

Response:

- Key issues with regard to the workforce include the age demographics, the need for an entrepreneurial mindset, a tendency toward specialization versus general competence, and an insistence on what is wanted versus what is needed in terms of critical skills.
- Program performance continues to be affected by systems engineering/integration, scope creep
- We do not seem able to recruit program leaders from other industries and move into our industry so totally reliant on internal development.
- Incentivization for program performance is currently flawed and needs to be restructured around true lifecycle performance
- We need to assign young new talent on critical projects, particularly those with shorter timelines that allow them to experience a broader segment of the program lifecycle
- Industry needs to drive down development cycle times to avoid scope creep, schedule and cost impacts; this also helps deflect politicization of the effort.
- In terms of production, we are seeing erosion of the second and third tier supplier base, a lack of engineering and/or program leadership in the lower tiers of the supply chain
- The industry has too much production capacity at the prime level in defense, there is a lack of raw material resources
- Customers and market realities demand that industry have greater flexibility in production – the ability to turn it up for a surge and to back down without major disruption.
- As with metrics, customers and industry do not have a shared definition of value when defining requirements.

### **Assuring Global Alliances/Business**

1. What four things would most accelerate the rate at which interoperability standards are adopted?
2. What factors (identify four to five) represent the cost of compliance concerning import/export and ITAR (in \$ and lost opportunities)?
3. What skill gaps within the workforce are likely to have the greatest adverse impact on the success of global alliances?

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4. What are the highest priority actions required to address these issues?

Response:

- Business growth is accelerated by crossing markets geographically
- Crises – whether economic, environmental, security – drive interoperability, with or without industry. (Example: warfighters will find a way to communicate out of need versus having the right tool.); society is forcing faster sharing of data and information.
- Industry and government need to partner to drive out bureaucracy to create the information interoperability transformation – just as was done in creating the highway infrastructure, the Internet, and other major societal changes
- Industry is missing opportunity due to lumbering system of regulation; industry in other countries is leaping past U.S. suppliers due to less regulation. How can this be overcome?
- Current interoperability efforts are focused on lifecycle data; there is a need for interoperability from a design/create perspective. The result would drive out significant cost for all industry organizations
- Current global knowledge base is thin, mostly on-the-job training that frequently requires remediation. .

### **Global Supply Chain Integration**

1. What are the four most significant issues that impede supply chain performance?
2. What four areas, if addressed on an industry-wide basis, would provide the greatest boost to performance (cost or cycle time for development)?
3. Cite three to five examples of successful supply chain integrations (not just A&D or our government customers) – what were the differentiators?
4. What is the appropriate role of large-system integrators in integrating a global supply chain? What are the highest priority actions required to move these areas of concern (or others you identify) forward?

Response:

- Visibility up/down (not just up) is required to assure risk mitigation at lower tiers of supply chain can be handled knowledgeably
- Engineering environments across the supply chain need to be integrated to be effective; this is critical in eliminating disruptive hand-offs.
- Program leadership needs to assess cash flow and asset management across the supply chain as part of risk mitigation; needs to include post-delivery visibility of all assets (warehoused, in-use, retired)
- The commercial and government contracting systems are different and yield different behaviors; for suppliers this can cause added layers of complexity.

### **Innovation**

Innovation – as it pertains to technologies, products and processes – is the lifeblood of the A&D industry. AVIATION WEEK published a report on the status of technology innovation in the aerospace and defense industry in the October 26 issue. .

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1. Was there anything in the overall report—including the Charles River Associates White Paper found at [www.AviationWeek.com](http://www.AviationWeek.com) – that surprised you?
2. What are the most important issues concerning technology innovation that require attention?
3. What gaps, if any, exist in the A&D industry’s pursuit of research and development and innovation?
4. What are the highest priority actions required to resolve these areas of concern (or others you identify)?
5. Are there significant examples of industry breakthroughs which should be included in the summary whitepaper for this roundtable?

Response:

- Surprises included a 40% decline in some research areas, flattening of avionics cost, and the fact that many organizations are acquiring innovation to gain intellectual property, but also engineering /science talent.
- Industry is organized around big programs, not big problems.
- There is a shift from innovation of heightened performance to innovation to make more affordable.
- The economic strain of today is straining innovation in lower tiers of supply chain where there is less cash and financing available.
- Need continued focus on policies that don’t impede innovation (tax credits, regulation of profit margin maximums)
- Identify a method to increase awards allowed for taking innovation risk in areas critical to society.
- Industry needs to develop a business model that supports and rewards rapid-response innovation.
- Motivation for innovation depends on a broad sense that we NEED to succeed.
- We need to establish an exchange between industry, academia, government like-minded people to push and focus on innovation and the climate that supports.
- Our audit-based mentality – within industry as well as government, replaces a drive for innovation with the notion of “let me stay out of trouble”

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