



## **Aviation Week Program Management Roundtable: Identifying, Resolving Barriers to Program Performance**

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Leaders from aerospace and defense companies and agencies met Nov. 1 at the fifth annual Aviation Week Executive Roundtable: Program Leadership in Phoenix, Az. The discussion focused on development of critical program leadership skills, while assuring performance on programs.

Sponsored by PwC, the Aviation Week Executive Roundtable: Program Leadership was hosted by the 2010 Program Excellence Chairman Jack Jacobs, VP Program Management for Honeywell Defense & Space, along with Michael Bruno, deputy managing editor-defense for Aviation Week.

Roundtable participants represented Aurora Flight Sciences, BAE Systems, Boeing, Defense Acquisition University, Donatech, EADS N.A., General Atomics Aeronautical Systems, Honeywell Aerospace, International Center for Complex Program Management, International Center for Contract Management, Lockheed Martin, Missile Defense Agency, NASA, Northrop Grumman, Pratt & Whitney, PwC, Raytheon, Rockwell Collins, USAF Research Lab and Valcor Engineering.

The Aviation Week Executive Roundtable was founded in November 2004 as a means to bring like-minded executives together to identify common issues and problems, and to recommend a course of action that would enable the participating organizations to contribute to a healthier industry. The Program Management roundtable was launched in 2005 to address issues specific to the development of strong leadership skills and to identify trends affecting program performance.

This year, the roundtable focused on actions that would:

- Address new government requirements for transparency/assessment
- Identify risks and opportunities relative to emerging markets
- Identify skills and tools needed at varied stages of program lifecycle
- Identify methods for identifying, assessing, evaluating and monitoring global supply chain
- Identify competencies and skills needed for 2015 leaders vs. today

The priority actions identified during the roundtable included:

- Need to research the strengths of innovation incubators and transfer key aspects to industry to assure A&D is a fast, exciting hub of technological innovation.
- Increase and invest in competency for and adhere to execution of planning cycle at the beginning and ongoing through programs
- Invest in people
  - Increase competency/skill of contracting/acquisition professionals throughout the enterprise (government, industry, etc.)
  - Identification of individuals with critical skills and who are high potential; develop plans to retain
  - Assure evaluation of people includes development and assessment of teaming, communication and human factors across the entire program value chain
  - Assure alignment of competencies between all functional professions
- Develop method/appropriate time to respond to international market opportunities (not currently part of “plan”
- Increasing complexity of systems and programs requires that the overall mission of the effort /product become the organization’s (total value chain) mission; align people, incentives and tools around delivery of products/service in support of the mission.
  - This implies a common language between user, acquirer and supplier
- To assure total supply chain alignment provide strategically aligned flow-down on mission, leading risk indicators; assure means to provide information and visibility in a defined way through the value chain.

Details of the table discussions follow.

**Tables 1 and 2**

***Affordability/Efficiency***

Top impediments to achieving cost efficiency in program execution

- Inadequate planning upfront for total life of the program
- Investment in people – wide array of skills and expertise, wisdom through experience and also new players who can be developed
- Must stay true and embrace gate processes; resist temptation to move forward before ready
- Need defined method to address the things you can’t control – identify and push up
- Risk identification must include quantification and determination of first, second and third-tier impact
- Reduce cycle time required for change
- Avoid redundancy – single year buys are creating duplicative efforts, from contracting to rebooting required when major changes occur annually – need to get after this

### **Tables 3 and 4** **Managing the Supply Chain**

Define what supply chain integration is and is not

- Suppliers are engaged early with adequate planning about relationships of suppliers, role in solution design and influence on critical decisions e.g. bid/no-bid
- Shared understanding of mission, requirements, affordability targets and visibility of effort throughout
- No “heaving it over the wall”
- Governance structure exists and is used
- Better leverage of technology to facilitate supplier communications, documentation exchange, accesses, etc.

Best methods for evaluating/assessing potential suppliers

> Assessing supplier capability and role over the program lifecycle

- Quality and delivery performance visibility through third tier
- Holding suppliers responsible for the same common certifications and standards e.g. ISO, CMMI as held by the prime
- Continuous risk assessment of shared key performance parameters – financial, pricing, quality, delivery
- Metrics evaluation shifts with lifecycle of program; through continuous monitoring vs event-like monitoring this transition better enabled

Metrics most often used to monitor health/risk of supply chain

- Quality
- Acceptance rates
- Financial health/credit rating
- Current and “surge” capacity potential
- Technical performance
- Attrition/turn over of experts
- Performance to plan
- Milestone accomplishment
- Major contributions to other programs
- EVMS
- Strategic – politics, intellectual property, partnership approach/response
- Business volume and focus - how important is your business to them?

Required to improve supply chain integration

- Shared incentives and goals (win/win); customer should have visibility of supplier role and impact on key performance metrics
- Identify interfaces throughout effort – responsibility/accountability/authority, key functions
- Continuous communication
- Shared recognition
- Clearly defined business relationship; supplier partnerships vs. transactional relationships
- Better understanding by prime of suppliers' cost and schedule drivers
- Use relationship-building processes throughout; one size does not fit all programs in terms of interfaces, communication, etc.

What one thing would we change to improve supply chain integration

- Transparency/visibility up AND down (see metrics – do suppliers know these about their customer?
  - “ What the prime learns late, the supplier learns even later. “

### **Tables 5 and 6**

#### **Complexity/Systems**

What is needed to improve performance across complex and complicated systems?

- A holistic approach that avoids fragmenting subsystems across multiple suppliers; the social systems contributing to communication, trust and leadership often omitted
- Different systems, as defined by the customer, require different disciplines; requires leadership that can assess these needs and form effort
- Important to be creative and fail early in the development vs pushing downstream to later stages
- Assure shared customer/prime/supply chain understanding of need for configuration management, data management and decision management
- Plan for entire lifecycle at onset

What are the systemic fault lines in complex programs

- Definition and execution -- and the time to do it -- of front-end tradeoffs to form realistic set of requirements
- Assure effort has system of validation/verification to meet all requirements at the total System and all Subsystem levels
- There are social stakeholders in the way complex systems evolve – politicians, international governments and users, domestic government; acquisition professionals AND developers need to engage with them as appropriate.
- There is no allowance for unknown complexities – we assume perfect definition of how complex a program is up front. Acquisition policies and practices reinforce this shortcoming.
- Product optimization at the integrated product team level sometimes leads to Sub-optimization of the overall system.
- Level of investment needed pre-contract/market shaping
- Skill silos – must find better ways to work across effectively while assuring adequate skill development/competency/incentivization (incentives vary widely e.g. engineering vs supply chain functions)
- Communication and connecting is a social issue, not a tool issue
- Layers of internal demands create additional complications to already-complex programs
- Talent level required for systems engineering is not fully defined or exists in industry or government acquirers.; many inconsistent definitions and widely varying expectations.

Recommend actions to improve complex program performance

- Shared understanding of mission of the program efforts and its requirements; align the company/program team around this mission (people systems, technology, etc.)
- Identification of risk up and down the chain; mitigate and retire continuously
- When a risk is identified, what you're really asking for is help – but do leaders of complex programs raise it if they receive, instead of help, additional oversight and demands?

- Assure program teams have appropriate social processes, considerations in place – teaming, communications, relationships and other human factors
- Aligned functional competency models – shared performance terms and shared definition of competencies throughout program team/value chain
- Simplify oversight to reduce cost while assuring transparency

**Table 7**

**Program Leadership**

After hearing the ITAR/import-export presentation, what gaps remain?

- No deadlines and no legislation tied to proposed process
- Needs a process to amend applicable ITAR/Import-Export lists
- Will there be sufficient resources to deal with submittals

What is required to better prepare for global operation/alliances?

- Global partnerships are the social network of a program and 80% of the effort is reflected in alliances
- Temptation is to rely on U.S. based models of operating.
- Allocation of government dollar sin U.S. on annual basis doesn't lend itself to long-enduring relationships
- Communication and relationships remain the biggest challenge; need for common language and time to establish

As we move through difficult economic time and downward trend in government spending, how do we preserve talent we developed over the past decade?

- Rotation programs carry higher risk now; need something on paper that will help individuals feel confident of a "home" when rotations are complete
- Strategically need to identify high potential people, assess risk of losing and formulate strategies to retain based on cooperative planning
- Need to research the strengths of innovation incubators and transfer key aspects to industry to assure A&D is a fast, exciting hub of technological innovatio

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