GOVERNMENT'S ROLE IN COMMERCIAL SPACE FROM THE PERSPECTIVE OF EMERGING INDUSTRY LEADERS

IAC-12-E6.4-D4.2.1

2nd Emerging Space Industry Leaders Workshop

Acknowledgements

Authors:

Bradley Cheetham

University of Colorado, United States, bradley.cheetham@colorado.edu

Juliana Feldhacker

University of Colorado, United States, juliana.feldhacker@colorado.edu

Angela Peura

United States, angela.peura@gmail.com

Ashley Chandler

Stanford University, United States, achandlr@stanford.edu

Cassie Kloberdanz

United States, cassie.l.kloberdanz@gmail.com

Lewis Groswald

United States, lgroswald@gmail.com

Acknowledgements

Ken Davidian – FAA AST

All Guest Speakers/Contributors

U.S. Congressman Randall M. Hultgren

Although the FAA has sponsored this project, it neither endorses nor rejects the findings of this research. The presentation of this information is in the interest of invoking technical community comment on the results and conclusions of the research.

Outline

- Workshop Overview
- Objectives
- Commercial Space Definition
- Why Commercial Space
- Findings and Conclusions
- ESIL-03

Emerging Leaders

- Defined: Early- to Mid-Career Young Professionals and Graduate Students
- Broad industry backgrounds/experience
- Total Attendees: 11
  - Male: 5
  - Female: 6
- Total Guest Speakers: 8
- Location: Capitol Hill, Washington D.C.

	Monday, March 26, 2012 *Longworth HOB 1540-A*		Tuesday, March 27, 2012 *Cannon HOB 5C (adjacent to room 509)*
8:30	**Welcoming and Introductions**	8:30	
9:00	**Overview of FAA AST & COE CST** *Ken Davidian, AST*	9:00	**Working Group**
9:30	**Overview of Workshop Objectives**	9:30	
10:00	**Other Transactional Authorities** *Richard Dunn*	10:00	
10:30	**Break**	10:30	**Break**
11:00	**Government Representatives (45min):** *Chris Shank - Deputy CoS, Congressman Lamar Smith* **Discussion (45min)**	11:00	**Industry and Regulators (45min):** *Jim Van Laak - Deputy Associate Administrator, FAA AST* *Clay Mowry - President, Arianespace Inc.* **Discussion (45min)**
11:30		11:30	
12:00		12:00	
12:30	**Lunch**	12:30	**Lunch**
13:00		13:00	
13:30	**Working Group**	13:30	**Working Group**
14:00		14:00	
14:30	**Break**	14:30	
15:00	**Civil and Defense (45min):** *Alan Ladwig, NASA HQ* *James Finch - Director, Policy and Strategy Development, OSD/Space Policy* **Discussion (45min)**	15:00	
15:30		15:30	**Break**
16:00		16:00	**FAA AST - Dr. George Nield**
16:30	**Evening Reception** Tortilla Coast	16:30	**Workshop Outbrief** *Committee on Science, Space, and Technology Room Rayburn 2325*
17:00		17:00	

Objectives

Assemble a knowledgeable group representing emerging leaders within the U.S. space sector to:

Objective 1: Identify the current role of the U.S. Government in the commercial space sector

Objective 2: Identify how this role should evolve in the future from the perspective of the assembled group

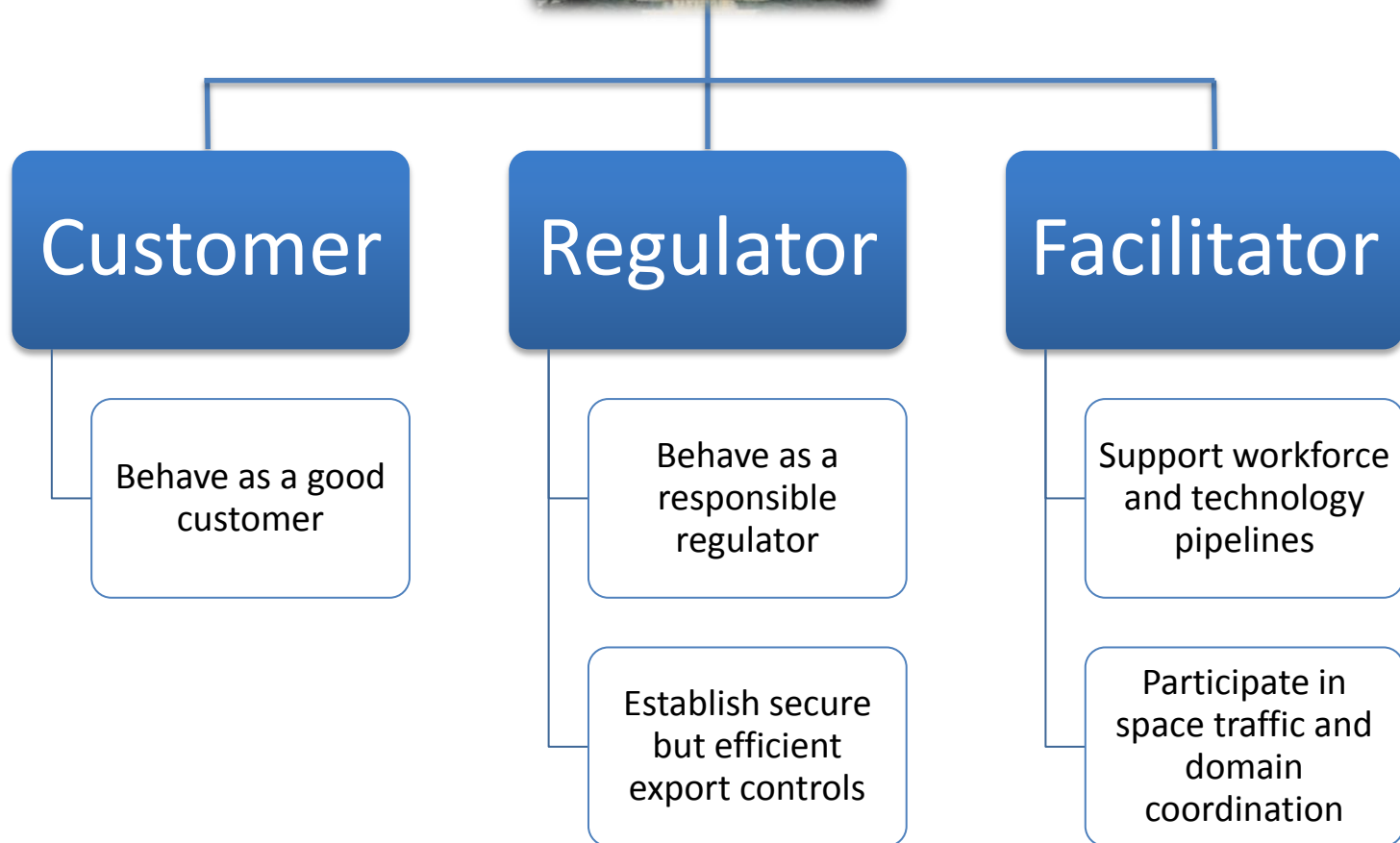Connect emerging leaders throughout the industry with peers and current industry leaders

Definition of Commercial Space

- "Refers to space goods, services, or activities provided by private sector enterprises that bear a reasonable portion of the investment risk and responsibility for the activity, operate in accordance with typical market-based incentives for controlling cost and optimizing return on investment…"
  - Source: 2010 U.S. National Space Policy

Why Commercial Space

- Provides cost efficiencies and enables government mission objectives
  - Able to do more with less
- Commercial competition drives innovation and cost-efficiencies which are not generated by monopolistic environments
- It plays to the fundamental competitive strength of the United States
  - Projected $57 billion aerospace industry trade surplus in 2011 (source: http://www.aia-aerospace.org/assets/Table6.pdf)

Framework

Customer
- Behave as a good customer

Regulator
- Behave as a responsible regulator
- Establish secure but efficient export controls

Facilitator
- Support workforce and technology pipelines
- Participate in space traffic and domain coordination

Objective 1

Identify the current role of the U.S. Government in the commercial space sector

- The U.S. Government serves the role of:
  - Customer
  - Regulator
  - Facilitator

Objective 2

How the Government's role should evolve in the future:

- Customer
  - Behave as a good customer
- Regulator
  - Behave as a responsible regulator
  - Establish secure but efficient export controls
- Facilitator
  - Support workforce and technology pipelines
  - Participate in space traffic and domain coordination

Behave as a Good Customer

It is in the U.S. Government's interest to act as a good customer

- Use the appropriate contracting instrument
  - Objective/Mission dependent (efficiency)
    - Traditional (FAR)
    - Other Transactions (SAA)
- Have consistent program objectives and design requirements
- Fully leverage commercial options
- Do not inhibit and, where possible, encourage a competitive market

Behave as Good Regulator

Current lack of clear and concise framework within government

Regulators are:

- FAA
- FCC
- NOAA
- Department of Commerce
- Department of Defense
- EPA
- Department of State

Establish Secure but Efficient Export Control

- Important for national security,
  - Most effective when done efficiently
  - Prevents or restricts domestic companies from competing/collaborating overseas
    - Disproportionally impacts smaller firms
    - Critical industrial base concern
- Continue ongoing process to re-evaluate/reform ITAR, specifically the munitions list Category 15
  - Consider the workforce component to future revisions

Support Workforce and Technology Pipelines

- Research and Development
  - Foster innovation
    - Prizes
    - Federal Grant Programs (ex. SBIR/STTR)
- Education
  - Workforce training/pipeline
    - Support STEM initiatives
    - Support for fundamental/basic research and fellowships
    - Support for re-training in areas of industry need

Participate in Space Traffic and Domain Coordination

- Domestic
  - Encourage and support improvements to range infrastructure by commercial users
    - Increase efficiency and effectiveness of launch ranges
  - Continue to investigate ways to reduce airspace interference/requirements

Participate in Space Traffic and Domain Coordination

- International
  - SSA
    - Continue expansion of data sharing efforts for space situational awareness
    - Work with industry to utilize owner/operator data (ex. Space Data Association)
    - Evolve SSA capabilities to efficiently collaborate with civil components (foreign and domestic)
  - Spectrum/Jamming
    - Work with partners to identify and address intentional jamming
    - Where appropriate collaborate with industry to reduce un-intentional spectrum interference

A Word on Government Decision Making

- We believe that an appropriate metric to consider within the context of decision making is the distribution and growth of future jobs instead of the current distribution of jobs.

- *Without innovation and change the industry may struggle in the years ahead. The status-quo is likely no longer a viable option.*

- Provided an opportunity to compete globally, the space industry will provide the high technology, advanced, and innovative jobs that will drive workforce and industrial base strength as well as economic prosperity.

Commercial Access to LEO

- We believe that commercial access for crew and cargo to LEO is a critical enabling component of long-term space industry architecture and investment.
  - Enables utilization of ISS
    - Facilitates meeting international obligations
    - Promotes advanced materials, medical, and other research in US

Commercial Access to LEO

- Risk limitations are required
  - Cargo
    - Currently two commercial companies (via CRS)
    - Preference for U.S. capability but not the only option
      - Back-up provided by Russian, European, and Japanese cargo capabilities
  - Crew
    - Back-up is Russian access (currently **only** access)
    - Preference for US capability and redundancy
    - International commitments and ISS utilization require this transportation as soon as safely possible
    - Currently at least four commercial companies (CCDev2)

ESIL-03

- Where: Buffalo-Niagara Convention Center Buffalo, NY, USA
- When: November 7-8, 2012
- In conjunction with SpaceVision 2012
- Topic: Game Theory Applied to Commercial Space