

ASCENDxTexas 2023

Outbrief of the Interactive Session

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Interactive Session Goal & Outcomes

Goal: to have meaningful dialogue amongst attendees to provide their perspectives on the barriers and pathways to success for our nation's exploration efforts

Outcome: participants will develop a set of prioritized areas of emphasis to be pursued during the coming year that benefit the national exploration goals of the next 5 to 20 years

Results will be shared with attendees so that you can impact these barriers from your sphere of influence in the coming year

Interactive Session Summary

- ❖ 19 separate table groups
- ❖ Roughly 170+ participants
- ❖ 61+ pathways to address

Industry

16 Unique Themes or Categories:

- 1. Visibility with non-aerospace**
- 2. Cost & Liability**
3. Mentor/Protege arrangements
- 4. IP Rights**
5. Inclusion of non-government
6. Approval for new tech
7. AI & ML impacts
8. Interoperability
9. Subsidizing launch costs
- 10. Barriers to entry**
11. Predictability
12. Common vision
13. Outreach/engagement
14. Bureaucracy and Gov't Overreach
15. Speed of the Government
16. Other

Visibility and Non-aerospace involvement.

Communicating why non-aerospace or outside industry should invest and participate in space can provide cross-pollination, improved processes in their industry, more capital and overall improvement.

Cost effectiveness and liability. Concerns surrounding the costs of the space ecosystem and the responsibility of the government to protect industries.

Protect intellectual property to drive industry acceleration. IP rights need to be appropriately protected to drive economic growth and technology development.

Reduce the barrier of entry. There's a high barrier of entry that keeps newer or smaller companies from entering the space ecosystem.

Policy/Government

13 Unique Themes or Categories:

1. **Lack of stable policy & funding**
2. **Regulatory framework that still allows innovation**
3. Conflicts of interest
4. NASA shifting focus towards strategy
5. JSC working with other markets
6. Scaling Artemis Base Camp
7. Space debris & planetary protection
8. Growing small companies
9. Reducing risk for industry
10. Protecting IP
11. Data sharing
12. DARPA model
13. Others

Stable, long term policies and budgets. We should address concerns about strong political influences and how its presence affects the availability of long-term, stable policies/ govt. funding

Balanced regulatory framework. We should focus on balanced regulation that supports appropriate standards without squashing innovation.

International

11 Unique Themes or Categories:

1. **Technical conversations w/in ITAR**
2. Government to government framework allowing for commercial
3. **Artemis Accords and boundaries**
4. Ever-changing politics
5. Strong IP rights
6. Managing bartering of technologies and system elements
7. International Law
8. Geopolitical events
9. Cultural understanding
10. Consistent data and information
11. Others

Sustainable ITAR Approach. Working on facilitating technical discussions with partners, utilizing the ITAR regulations more efficiently and eliminating roadblocks.

Artemis Accords. Working to describe in detail the legal framework and limitations applicable to collaborative agreements under the Artemis Accords.

Capital

12 Unique Themes or Categories:

1. **Scaling capital beyond VCs**
2. **Expectations on Return on Investment**
3. NASA considering commercial profits
4. IP rights
5. Common, available core infrastructure
6. **Early monetization/profit**
7. Lowering costs
8. VC appetite for failure
9. Establishing market value
10. **Managing risk**
11. Role of NASA as the buyer
12. Others

New kinds of funding. Work to increase VC funding while **seeking and scaling other new types of funding.**

Realistic investor expectations. Work to identify shared ROI expectations and exit timelines.

Path to monetization. Work to understand what will turn a profit and close a business case, and where the margins will (and won't) be.

Clear risk posture. Develop a reasonable understanding of where the risk is, where the tolerance is, how it is shared and balanced.

Workforce

9 Unique Themes or Categories:

- 1. New education models**
- 2. Non-traditional or expanded workforce pathways**
- 3. Equivalent compensation**
4. Gov't/Commercial sharing instead of competition
5. Upskilling with AI/ML/data
6. Upskilling from other industries
7. Capital intensive facilities
8. Parallels with nuclear industry
9. Using generative AI

Industry perspective on new educational model. Think about new paradigms to drive STEM education that includes job training and engagement.

Develop non-traditional workforce pathways beyond university. Integrate technical and non-university pathways for upskilling and cross-training from the earliest years.

Equivalent Compensation. Develop a competitive compensation model to support workforce engagement and retention.

Interactive Session Summary

- ❖ THANK YOU to those who provided inputs and participated in the table discussions
- ❖ Soon these results will be shared with you, so that you can impact these barriers from your sphere of influence. As you leave the conference, please consider potential solutions that you could contribute to.

We got our favorite AI tool to summarize the discussions and identify the call to action in each area:

INDUSTRY: As industry professionals, we should work on increasing visibility for space-based solutions to improve processes in non-space industries, collaborating with JSC and other industry clusters to support LEO and lunar initiatives, and working to standardize industry codes and interoperability to facilitate cooperation and growth.

POLICY OR GOVERNMENT: As industry and international partners, we should work on advocating for stable policy and funding for space programs, providing input to government regulatory frameworks to support innovation and progress, and encouraging NASA to prioritize healthy contractor profits and work towards a more progressive acquisition model that reduces industry risk.

INTERNATIONAL: As international partners and industry professionals, we should work on advocating for more technical conversations with trusted partners despite ITAR restrictions, creating frameworks that allow for international partnerships to support space initiatives and foster competition and investment, and clarifying the legal mechanisms and boundary conditions for collaborative agreements with U.S. entities that support the Artemis Program.

CAPITAL: As entrepreneurs and industry professionals, we should work on attracting institutional capital such as private equity and traditional investment banking to invest in the space sector, creating new products and services that can turn into profit right away, and advocating for common, available core infrastructure to lower costs and make venture capital/private funding more accessible.

WORKFORCE: As industry professionals, we should work on promoting space careers and opportunities to a diverse generation of students, investing in the upskilling of our workforce to leverage emerging technologies such as AI/ML, and collaborating to create a workforce strategy that integrates schools, universities, and on-the-job training programs to prepare the workforce for the future of space.