



University-led Strategic Aviation Research

AESB 2015

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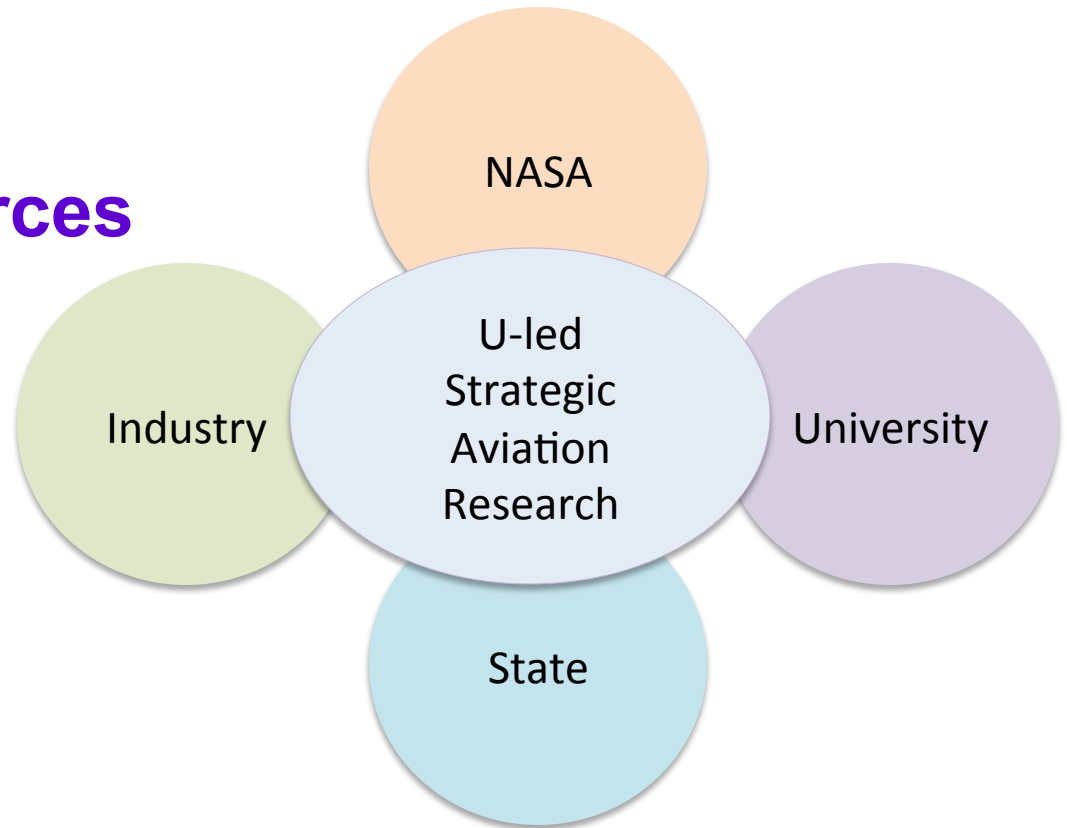
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OUTLINE

1. Leverage Resources

- 2. Greater Utility
- 3. Cross-Cutting
- 4. Innovation at Intersections

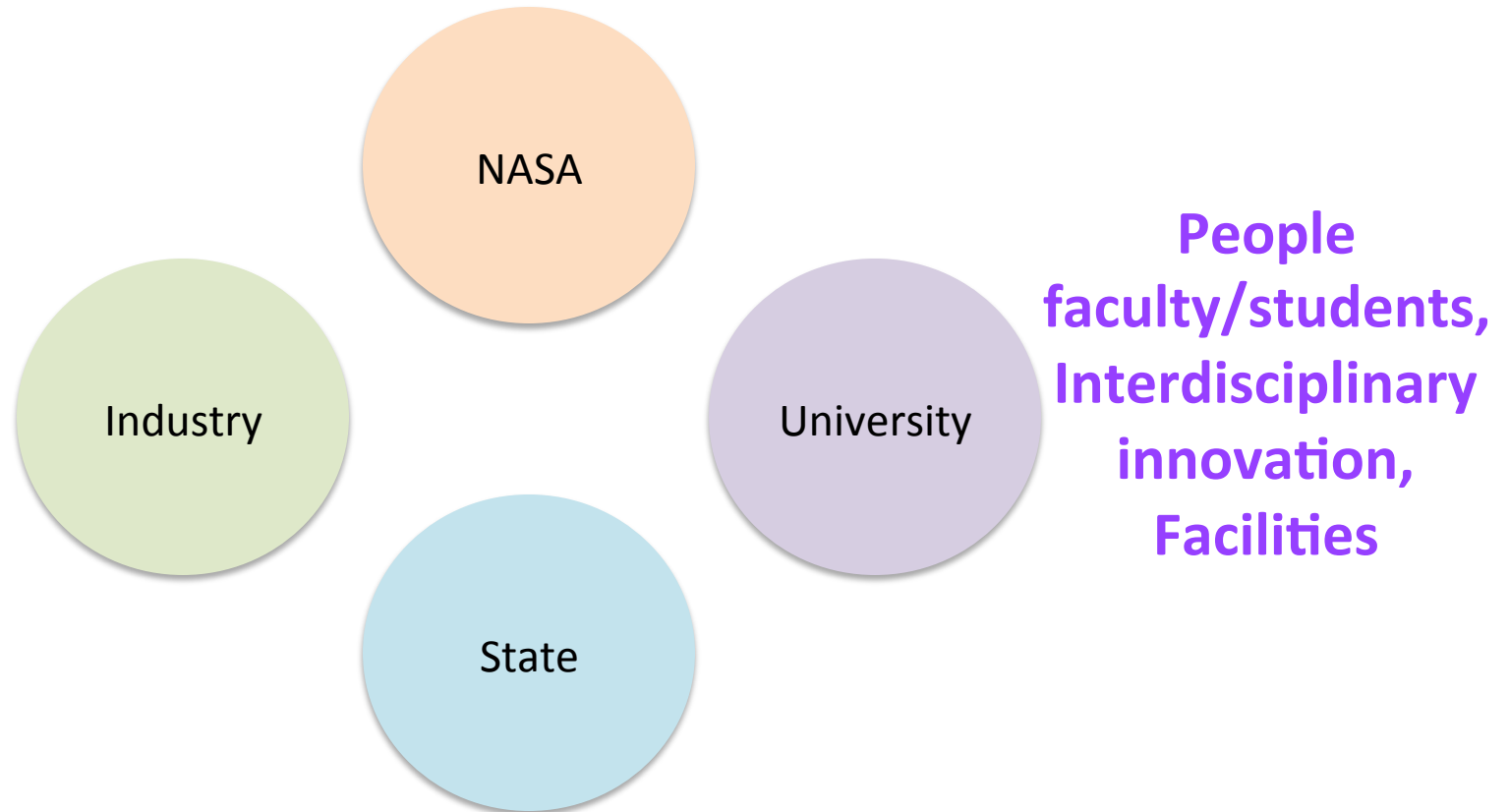




STAKEHOLDER STRENGTHS

Enable sustained national initiatives

Applied
research
capabilities



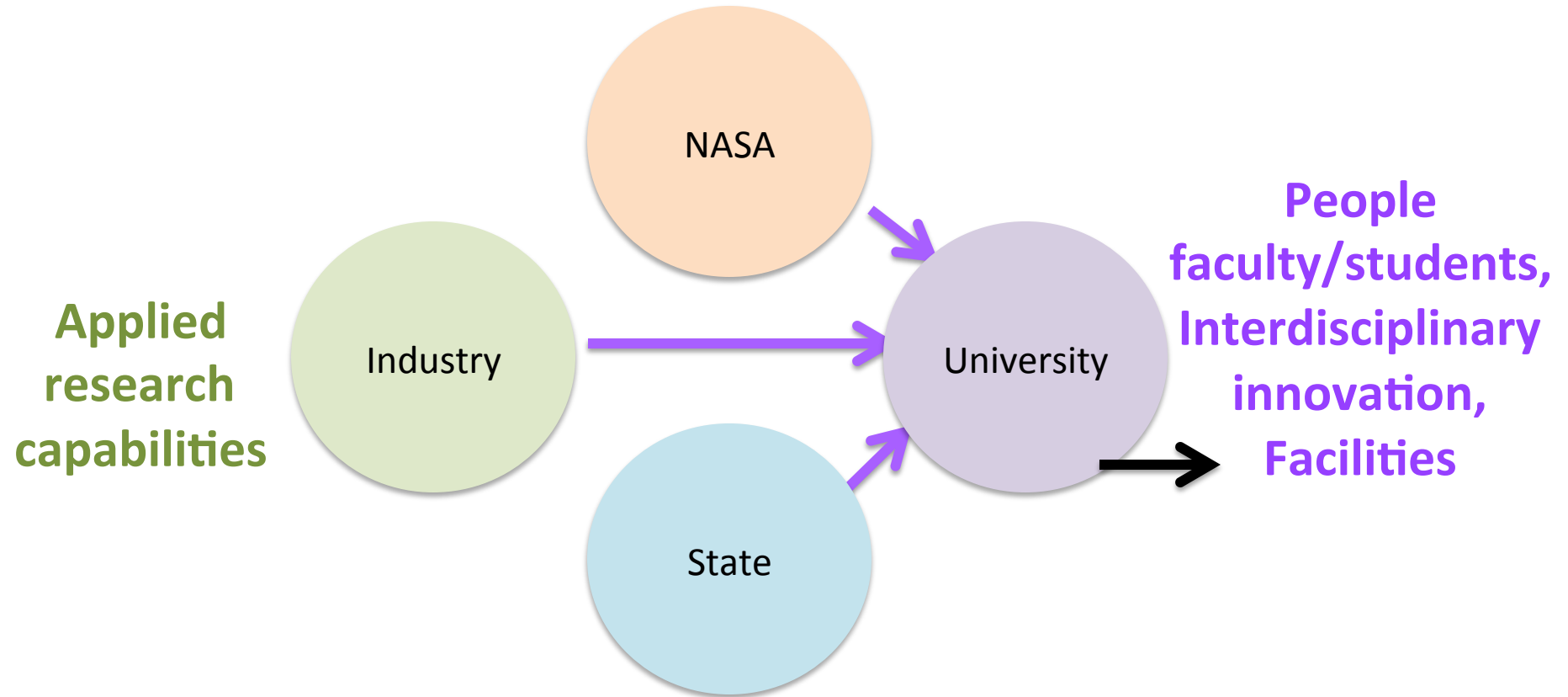
Promote Economic development
(jobs, jobs & jobs)

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TRADITIONAL FUNDING MODEL

Enable sustained national initiatives



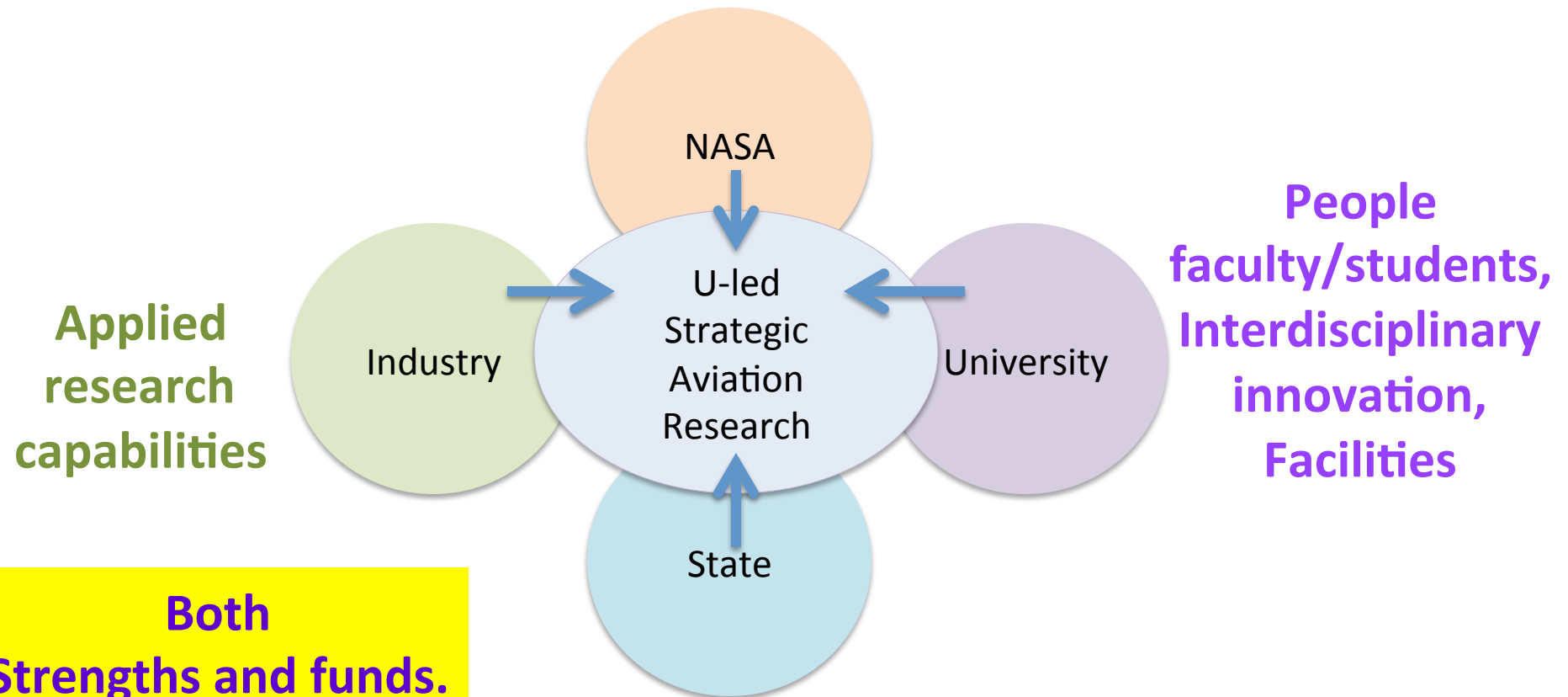
Promote Economic development
(jobs, jobs & jobs)

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CENTER: LEVERAGES RESOURCES

Enable sustained national initiatives



**Both
Strengths and funds.
Meet
stakeholders'
needs**

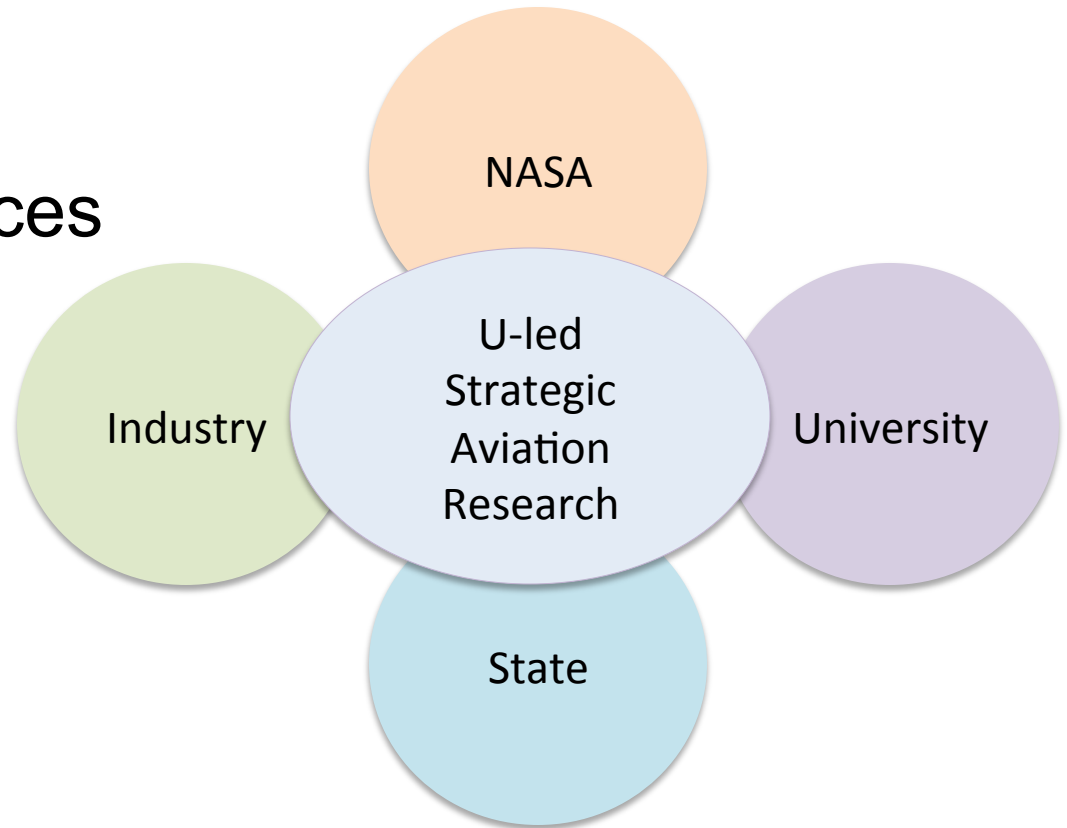
**Promote Economic development
(jobs, jobs & jobs)**

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OUTLINE

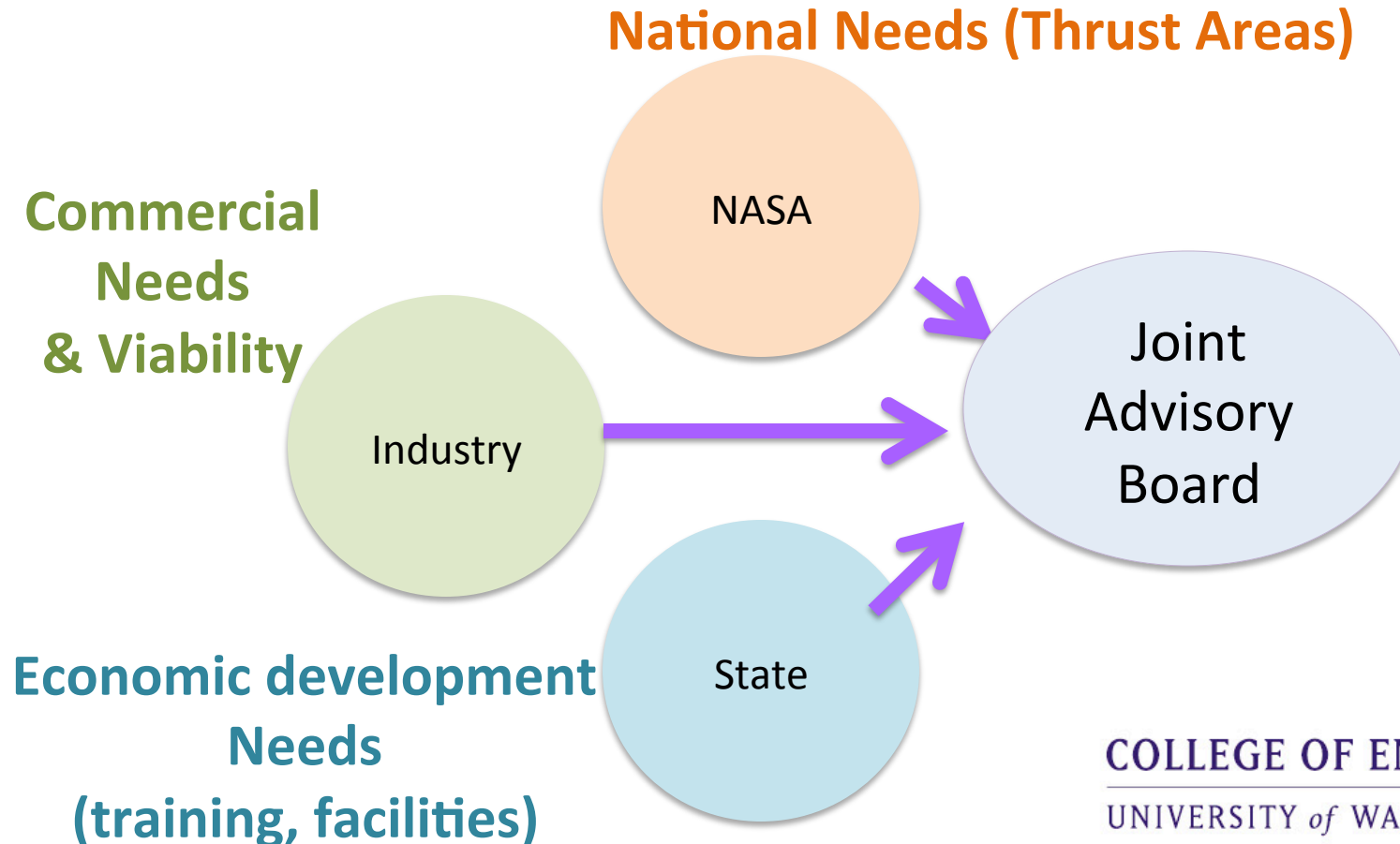
1. Leverage Resources
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GREATER UTILITY

- **Joint Advisory board of Stakeholders**
enables better need identification





GREATER UTILITY (**CENTER SIZE**)

- Issue: enable strategic projects

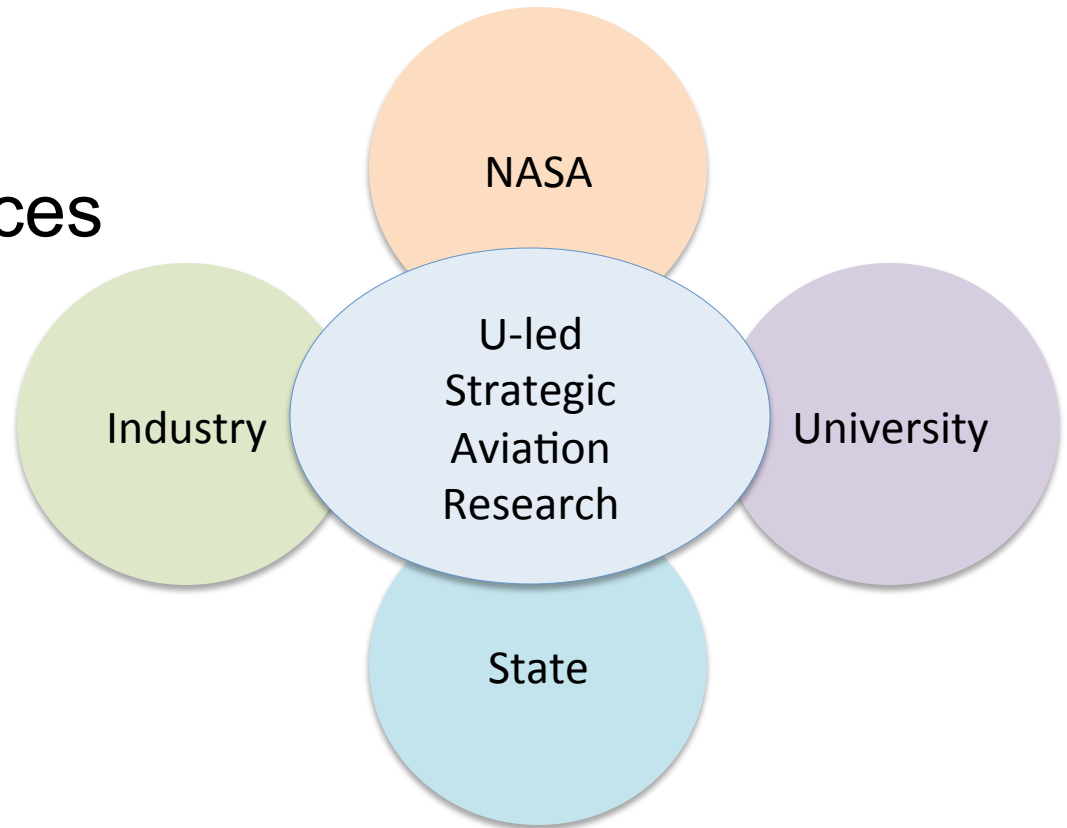
CENTER should be large enough to promote high-level participation in advisory board from stakeholders (e.g., industry) and undertake strategic research projects

**Sufficient size
(scope and time)
to enable
strategic projects**



OUTLINE

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CROSS CUTTING

– Why cross-cutting?

Need Sufficient expertise for the research

– Example: Focused research topic

- Single university: maybe one top faculty in area
- Multiple universities needed to build expertise

– Example: Broad thrust area research

- different research areas are needed (human factors, data, fluids, etc.)
- Cross-cutting could be different universities and/or different companies

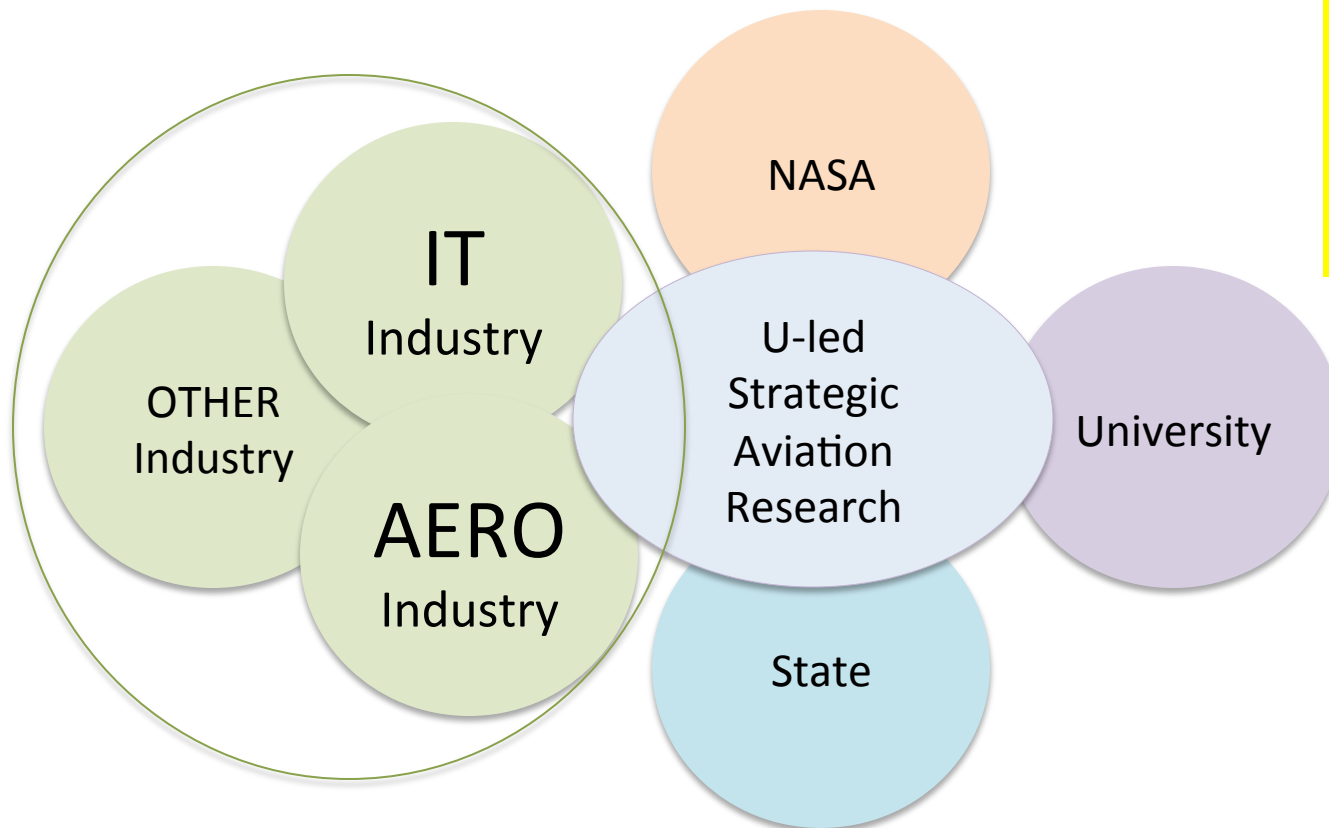


CROSS CUTTING INDUSTRIES

- Example: DATA is important to, e.g.,
 - Safety of assured autonomy
 - Security of cloud-based computation/storage
 - Performance Optimization
- **Strengths** in different industry sectors
- e.g., in the Pacific Northwest
 - **IT** (Microsoft, Intel, Amazon, others)
 - **Aerospace** (Usage: Boeing, Blue-Origin, Insitu)



CENTER: ACROSS INDUSTRIES



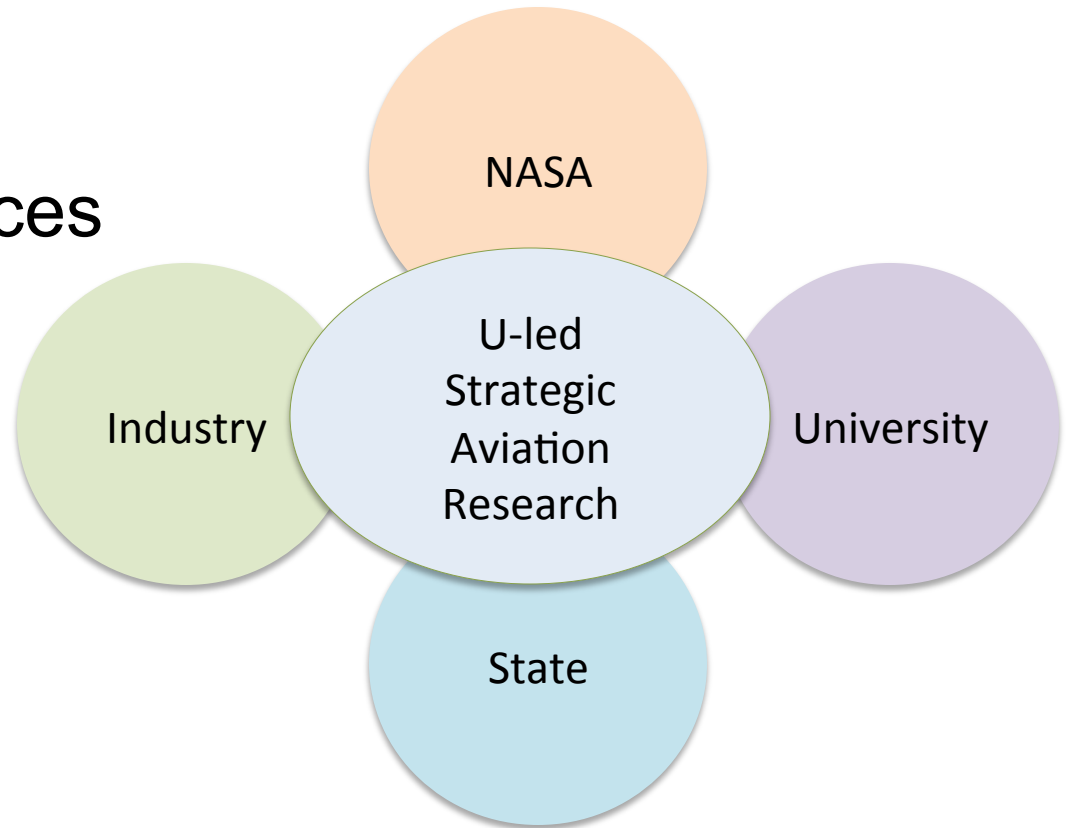
Cross cutting
can be
across
industries

**U-led CENTER COULD BRING SUCH DIVERSE INDUSTRIES TOGETHER
(solve common problems, e.g., assured autonomy)**



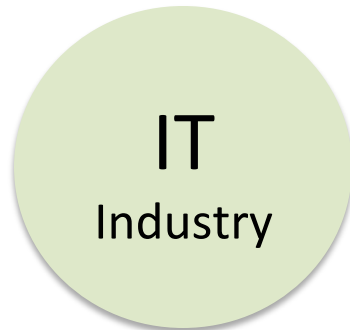
OUTLINE

1. Leverage Resources
2. Greater Utility
3. Cross-Cutting
4. **Innovation at Intersections**





INNOVATION AT INTERSECTIONS



Microsoft
Intel
Amazon

Cloud enabled Computing
Security
Data



Boeing
Blue-Origin
Insitu

Aerospace
Manufacturing,
UAV

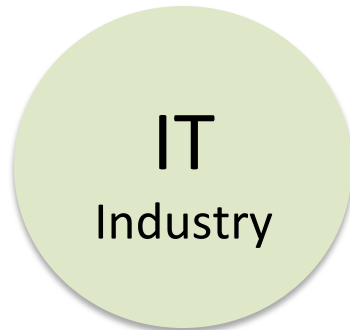
Fertile Area: Potential Innovations affecting assured autonomy:

Security, cloud-enabled computing, verification and validation

Similar issues in both sectors



INNOVATION AT INTERSECTIONS



Microsoft
Intel
Amazon

Cloud enabled Computing
Security
Data



Boeing
Blue-Origin
Insitu

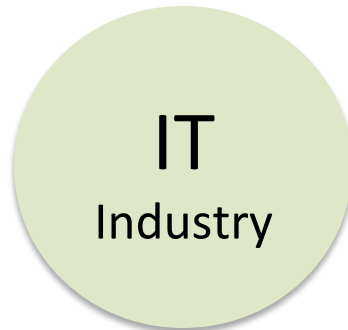
Aircraft
Manufacturing,
UAV Automation

Challenging to bring them together:

Differences in scale: size, time, volume. IP issues.



CENTER: EXPLOIT INTERSECTIONS



Microsoft
Intel
Amazon

Cloud enabled Computing
Security
Data



Boeing
Blue-Origin
Insitu

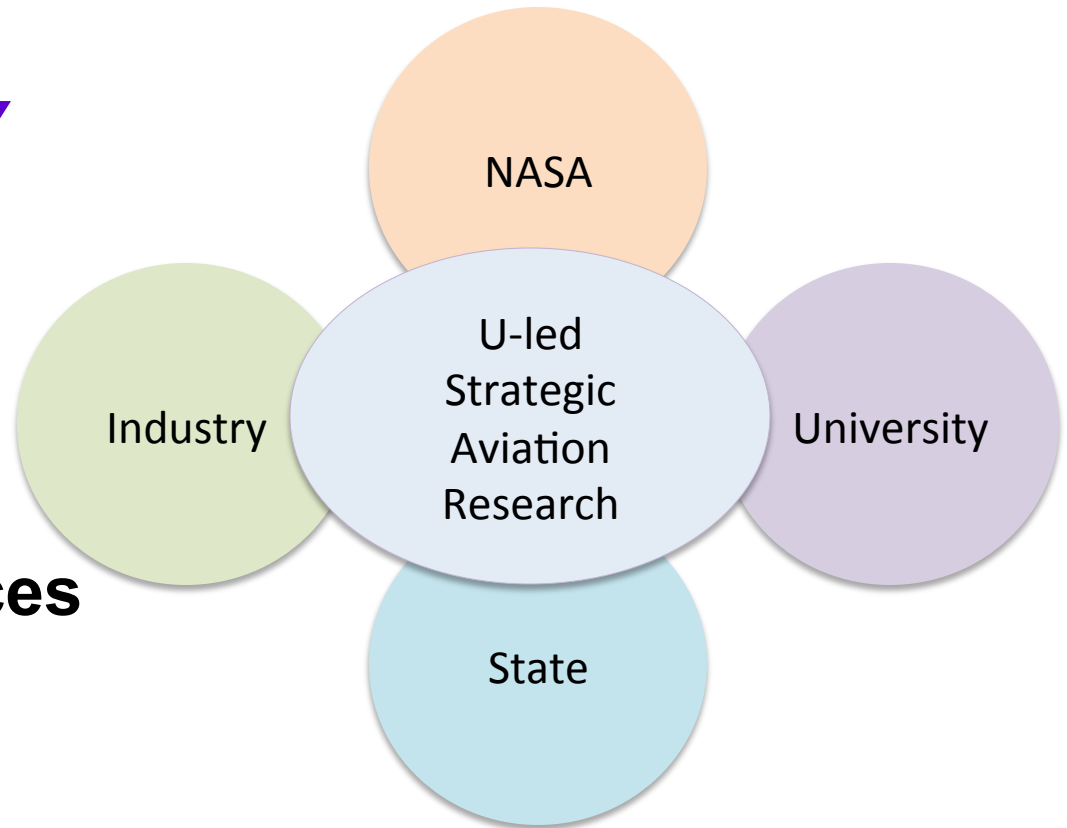
Aircraft
Manufacturing,
UAV Automation

**U-led
Center can
exploit
innovations
at the
intersections**

A Center could bring them together to address common needs



SUMMARY



- 1. Leverage Resources**
(funds/strengths)
- 2. Greater Utility**
(needs identification,
size for strategic efforts)
- 3. Cross-Cutting**
(can be across industries)
- 4. Innovation at Intersections**
(address common goals)