



Webinar:  
**Exploring Insights  
 from Emerging  
 Space Agencies**

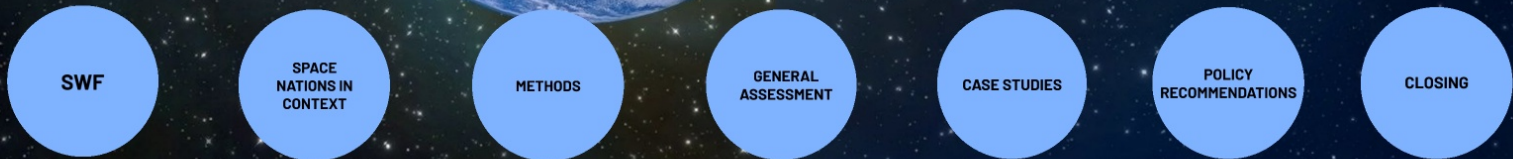
October 21, 2020

Moderator: Victoria Samson

Speakers: Renata Knittel Kommel, Ashley Peter, Luc Riesbeck



<https://aerospace.csis.org/exploring-insights-from-emerging-space-agencies/>



## SWF: A Quick Primer



- Secure World Foundation (SWF) is a private operating foundation that promotes cooperative solutions for space sustainability
- Our vision: The secure, sustainable, and peaceful uses of outer space that contribute to global stability on Earth
- Our mission: Secure World Foundation works with governments, industry, international organizations, and civil society to develop and promote ideas and actions to achieve the secure, sustainable, and peaceful uses of outer space benefiting Earth and all its people
- Secure World Foundation is dedicated to the establishment of effective and efficient systems of governance for outer space and for improving the safety of operations in Earth orbit









# How to Show Closed Captions

A screenshot of a video player interface with a dark background. At the bottom, there is a control bar with several icons: "Audio Settings", "Chat", "Raise Hand", "Q&amp;A", "Closed Caption" (highlighted with an orange box), and "Leave". A context menu is open over the "Closed Caption" button, showing options: "Show Subtitle", "View Full Transcript", and "Subtitle Settings...". Two orange callout boxes provide instructions: "Step 1: Find the CC button and click it" points to the "Closed Caption" button, and "Step 2: Click 'Show Subtitle'" points to the "Show Subtitle" option in the menu. In the top right corner, there is a button labeled "Enter Full Screen".

[www.swfound.org](http://www.swfound.org)



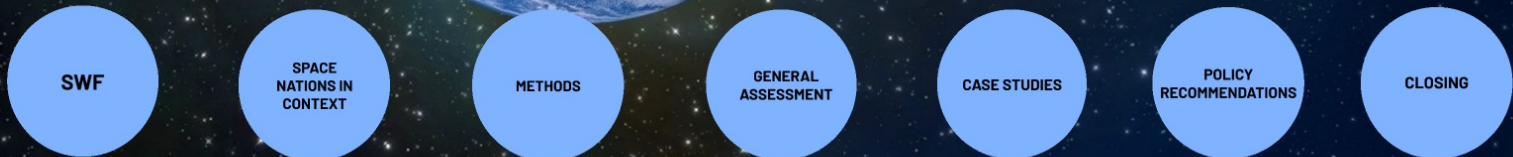


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## Research Questions

# Introduction

- Today, over sixty years after the establishment of the first space agency, the space sector has seen rapid commercialization.
- Particularly in the last decade, technological development and reduced costs have lowered the barriers of entry to space for non-traditional actors. Mission architectures, teams, and uses of space are diversifying widely and rapidly.
- Nations no longer need a space agency to participate in space activities and benefit from space-based data. But despite this, over 15 new agencies have been established in the last 5 years.





## Research Questions

Why and how are emerging space nations establishing space agencies?

**1** What are the motivations for standing up and investing in a national civil space agency in the past 5 years?

- What are the benefits and challenges of doing so now?
- How do new entrants characterize the space industry/economy?

**2** What plans, programs, missions, and goals do emerging space nations see as necessitating a national space agency in order to do?



## Methodology

**CSIS**  
AEROSPACE  
SECURITY  
PROJECT



### General Assessment (Why?)

- Identified nations that have established space agencies during or since 2014
- Comprehensive literature review
- Examination of trends

### Case Studies (Why and How?)

- Formation of criteria & selection of case study nations
- Literature review & question formulation, IRB approval
- Interviews and follow-up



# General Assessment

Why are nations creating civil space agencies today?

Findings

Conclusion





Rationales

Roles

## GENERAL ASSESSMENT

16 space agencies were formed between 2014 and 2019

2014

Bahrain  
Paraguay  
Poland  
UAE

2018

African Union  
Australia  
Greece  
Luxembourg  
Saudi Arabia  
Zimbabwe

2019

Egypt  
Philippines  
Portugal  
Turkey

2016

New Zealand

2017

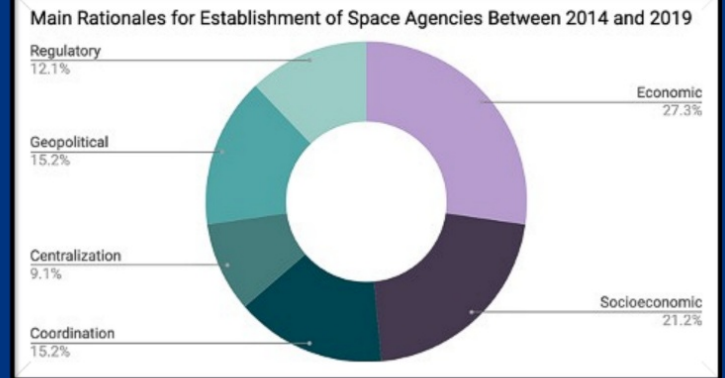
Kenya

**Main rationale:**  
Promote economic development and harness the benefits of space.



# Rationales

Nation	Year Est.	Main Rationale
Egypt	2019	Socioeconomic, Centralization, Geopolitical
Philippines	2019	Centralization, Geopolitical
Portugal	2019	Economic
Turkey	2019	Coordination, Geopolitical
African Union	2018	Socioeconomic
Australia	2018	Economic, Coordination, Regulatory
Greece	2018	Economic
Luxembourg	2018	Economic
Saudi Arabia	2018	Economic, Socioeconomic, Coordination
Zimbabwe	2018	Socioeconomic
Kenya	2017	Socioeconomic, Regulatory
New Zealand	2016	Economic, Regulatory
Bahrain	2014	Economic, Socioeconomic, Geopolitical
Paraguay	2014	Socioeconomic
Poland	2014	Economic, Coordination
UAE	2014	Economic, Coordination, Centralization, Geopolitical, Regulatory



- Economic
- Socioeconomic (14)
- Coordination
- Centralization
- Geopolitical (5)
- Regulatory



## Roles

*Centered around the management of space activities rather than their execution*

- Strategies and policies
- Regulatory frameworks
- Coordination mechanisms
- International representation
- Cooperation with other space nations





## GENERAL ASSESSMENT'S CONCLUSION

- “ Emerging space agencies have been more commercially driven in both their rationales and roles. ”





# Case Studies

We selected two nations, the UAE and Luxembourg, for our in-depth case studies

LUXEMBOURG

UAE



# Case Study #1: Luxembourg

LSA

Rationale

Important  
Factors

Lessons  
Learned





***The Luxembourg Space Agency (LSA)  
was established in September 2018.***

- **Main goal:** Promoting the development of the national space industry
- Housed under the Ministry of the Economy
- Foster an environment that's attractive for new space businesses
  - Workforce development
  - Regulatory guidance
  - Financing mechanisms





# Rationale

*What led them to create a space agency?*

## **Economic Diversification**

- Over-reliance on one sector at a time;
- Find the next "big thing" to expand the national portfolio of economic activities in Luxembourg
  - A new innovative niche

## **2016: Space Resources Initiative**

2017: Law on the Exploration of  
Space Resources

- Pioneer, second only to the US
- Attracted New Space companies



## Important Factors

- Previous involvement in the space sector (ESA & SES)
  - Wealthy nation
- Small, little bureaucracy

*Until 2018, the SRI was being led by the Ministry of Economy's Department of Space Affairs*

## Why a Space Agency?

- Coordination
- Flexibility
- Visibility
- Commitment





## Lessons Learned

- The purpose of the agency was determined before its creation
- Found a gap to fill
  - Emerging niche
  - Specialize and cooperate
  - Competitive advantage
  - Not only space resources
- Risk tolerance
  - Investing in early stage companies in a still unproven segment of the space economy



# Case Study #2: United Arab Emirates (UAE)

UAE Space  
Agency

Rationale

Regulatory  
Approach

Important  
Factors

Lessons  
Learned





***The UAE Space Agency (UAESA) was established in August 2014.***

- **Federal government authority that oversees and facilitates the UAE's space sector**
- **Main goals:**
  - Develop the national space sector
  - Promote scientific research & innovation
  - Attract and promote young STEM talent
  - Build international cooperation



## Rationale

*What led them to create a space agency?*

**Timing:** Established when there was a clear need

**Reasons:**

1. Economic diversification
2. Geopolitical impact
3. Consolidation and regulation of space activities
4. Contribution to the global community





## Regulatory Approach

*How did they formulate their regulations?*

**Method:** "Benchmarked" frameworks of other established agencies

An **agile** and **technology neutral** regulatory model works best for the UAE



## Important Factors

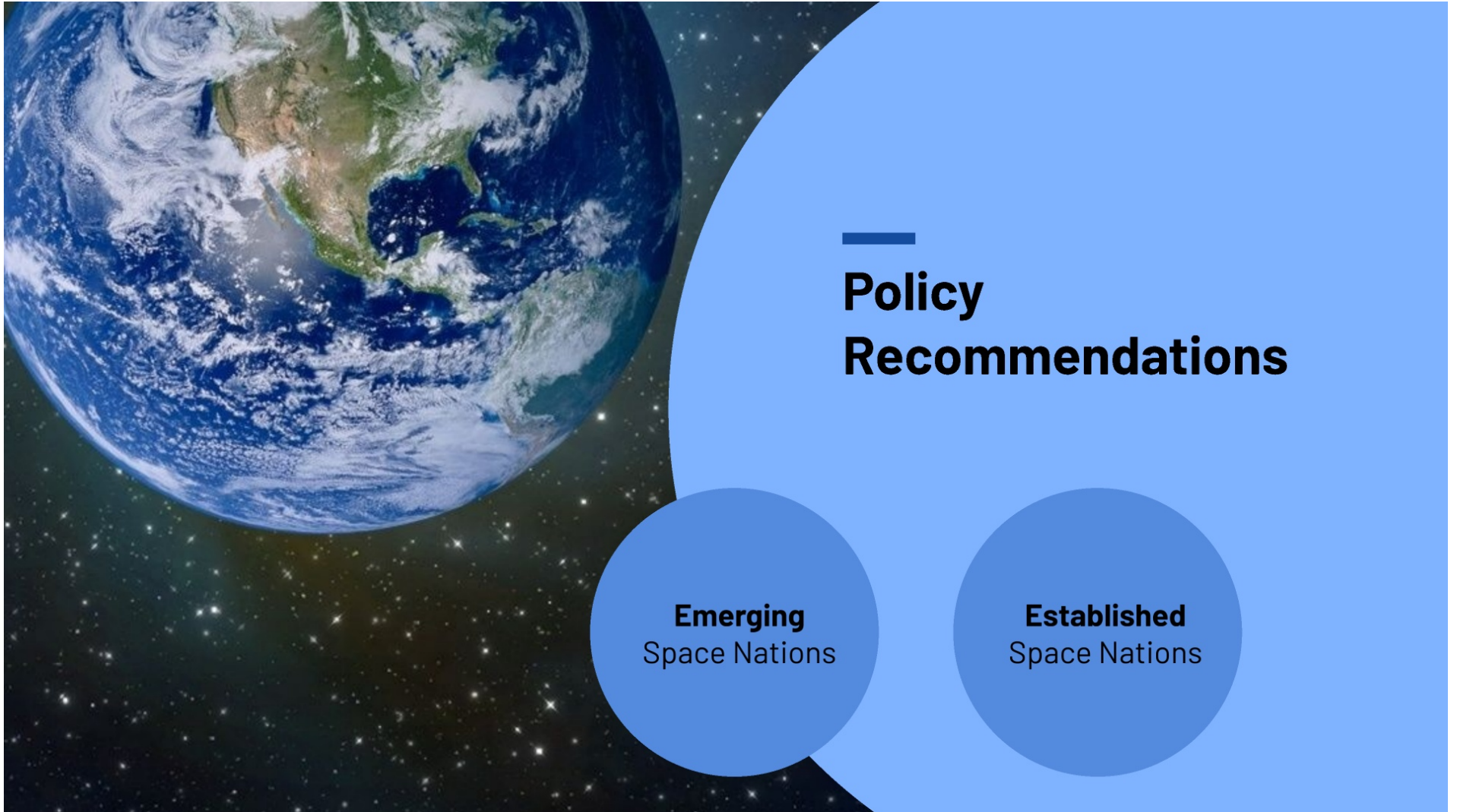
- **Well-developed space sector** prior to establishment of UAESA
- Seven emirates with **autonomous local governments**
- Strong federal **political will and financial support** for space activities





## Lessons Learned

- Identified a **clear need** for creating the UAE space agency
- Implemented **agile, scalable, and technology neutral** regulations
- **Filled gaps** and opportunities in the international space sector
- Gained **strong federal support** and interest for space activities



—  
**Policy  
Recommendations**

**Emerging**  
Space Nations

**Established**  
Space Nations





## For *Emerging Space Nations*

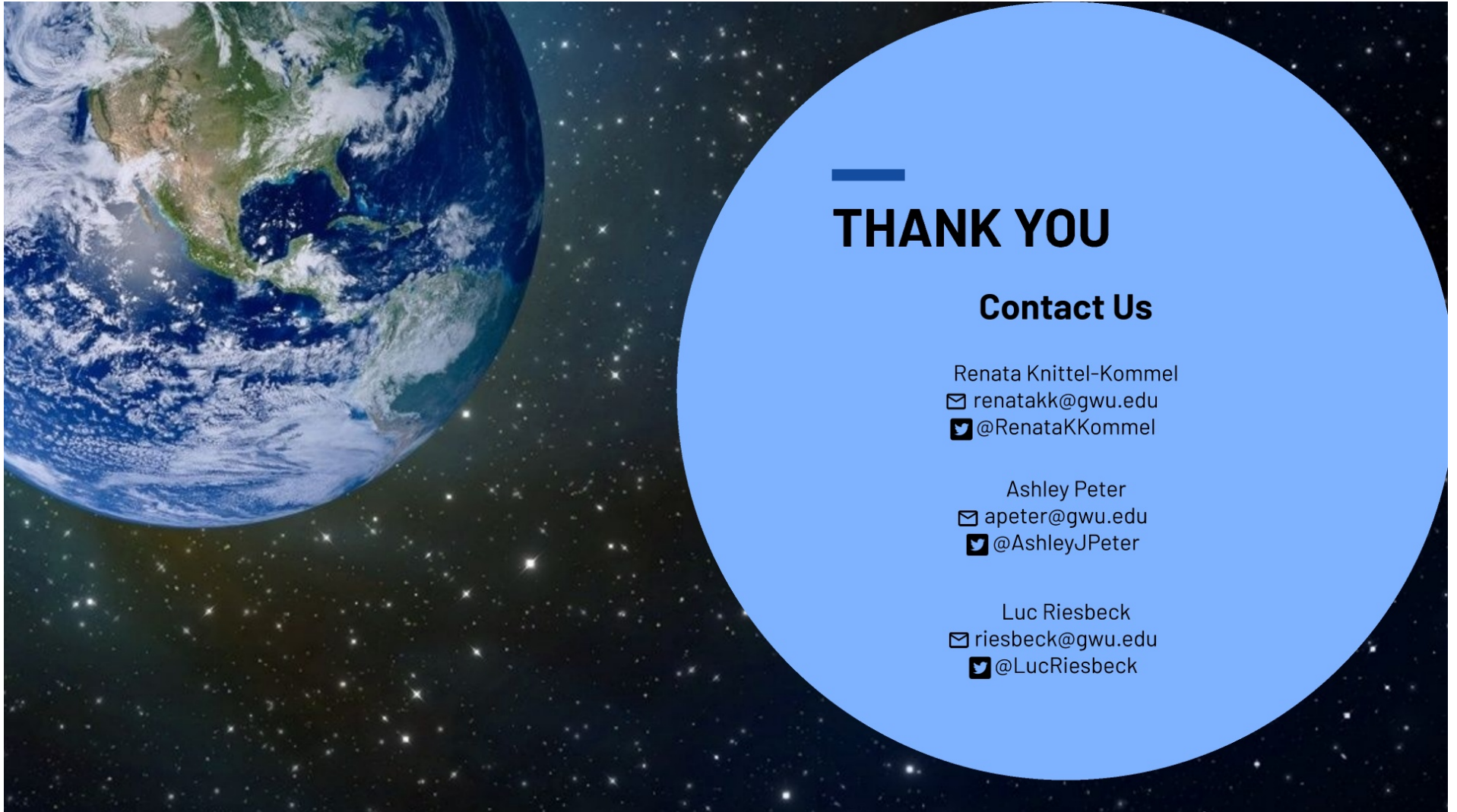
1. Determine the **purpose** of your space agency before developing a regulatory framework
2. Design regulatory frameworks to be **agile and technologically neutral**
3. **Find gaps** in the space sector and specialize to fill them
4. Follow international **best practices** related to space
5. **Take advice** from more established space agencies, but **avoid becoming risk averse**
6. **Collaborate** (i.e., internationally, domestic cross-sector) and share best practices



## **For *Established Space Nations***

1. Engage in **capacity-building** with emerging space nations, for regulatory frameworks—but keep an open mind
2. Ensure a level playing field by acting as a **good role model** for emerging space nations, by prioritizing sustainable uses of space and best practices for safety and transparency





# THANK YOU

## Contact Us

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