IAF SYMPOSIUM ON EMERGING SPACE ECOSYSTEMS (E11)
Connecting Emerging Space ecoSystems (1)

Author: Mr. Tim Whitney
Arizona State University, United States

Ms. Kylie Wetnight
Arizona State University, United States
Ms. Yudidt Nonthe Sanchez
Arizona State University, United States
Ms. Gabriella Nakleh
Arizona State University, United States
Mr. Chase Kassel
Arizona State University, United States
Mrs. Kelli Kedis Ogborn
Space Foundation, United States
Ms. Allison Areias
UN Office of Outer Space Affairs, Austria
Ms. Nalini Chhetri
Arizona State University, United States
Dr. Timiebi Aganaba
Arizona State University, United States
Ms. Jessica Rousset
Arizona State University, United States

SDG 17: MAPPING OPPORTUNITY FOR MUTUALLY BENEFICIAL PARTNERSHIPS IN EMERGING SPACE ECOSYSTEMS

Abstract

Led more than ever by commercial enterprise, the contemporary space age has proven to yield technological, scientific, and economic benefits to global communities. However, partnerships between emerging spacefaring ecosystems (ESFE) and space commercial enterprises (SCE) face challenges due to capacity gaps such as infrastructure, education, broad economic factors, and political landscapes. Examples of ESFE/SCE partnerships demonstrate that both stand to benefit from partnering with each other, however both real and perceived hurdles remain on both sides. According to the United Nation's Sustainable Development Goal 17, partnership should be mutually understood, respectful, and beneficial. By identifying benefits and hurdles of such partnerships, this research will elucidate mechanisms that can close capacity gaps for ESFEs while creating value to SCEs with the goal of driving more commercially-led capacity-building partnerships.

To this end, a transdisciplinary research design was established to (i) define the scope of ESFE/SCE partnerships to be analyzed (e.g. maximum % GDP invested by ESFE into space), (ii) identify, categorize and organize the various elements or variables of an ESFE/SCE partnership and (ii) uncover correlations among these elements that can inform sustainable mechanisms for driving more such partnerships. Using select SDF 17 targets and indices as a framework, our analysis will leverage sustainability systems mapping, business analysis tools, data science, and literature review to accomplish the aforementioned research design goals.

ESFS/SCE partnership elements or variables that we are analyzing include descriptive elements. For SCEs, these include their primary business segment(s) and customers, size and maturity, regulatory conditions, and partnering history and investments in ESFEs. For ESFEs, these include regional scope; investment levels in the space sector and primary drivers for those investments; maturity of their space ecosystem; the regulatory, policy and political environment; and partnering history.

Our independent variables include indicators of "Openness to Capacity Building Partnerships" by each aforementioned group. A qualitative aspect of this research will include data collection through semi-structured interviews of key stakeholders of EFSEs and SCEs informed by the first phase of data collection.

With this research, our goal is to assist beneficiaries on each side of the emerging-established continuum of spacefaring capacity to create sustainable value and growth to the benefit of global stakeholders.