

ENTREPRENEURSHIP & INVESTMENT SYMPOSIUM (E6)  
Synergy of Entrepreneurship, Investment, Government, and Industry (3)

Author: Dr. John Olson

National Aeronautics and Space Administration (NASA), United States, john.olson@nasa.gov

Mr. Gary L. Martin

National Aeronautics and Space Administration (NASA), Ames Research Center, United States,  
gary.l.martin@nasa.gov

COMMERCIALIZATION IS REQUIRED FOR SUSTAINABLE SPACE EXPLORATION AND  
DEVELOPMENT

**Abstract**

The U.S. Space Exploration policy outlines an exciting new direction in space for human and robotic exploration and development beyond low Earth orbit – first return to the Moon, then on to Mars, and then beyond. Pressed by this new visionary guidance, human civilization will be able to methodically build capabilities to move off Earth and into the solar system in a step by step manner, gradually increasing the capability for humans to stay longer in space and move further away from Earth. The new plans called for an implementation that would create an affordable and sustainable program because the program must span over generations of explorers, each one pushing back the boundaries and building on the foundations laid by the earlier.

To create a sustainable program it is important to enable and encourage the development of self-supporting commercial space industry leveraging both traditional and non-traditional segments of the industrial base. Governments may not be able to sustainably maintain the space frontier on their own because of their focused goals and the costs. As such, a new space development industrial sector is needed that can one day support the needs of commercial space enterprises as well as provide capabilities that NASA and other national space agencies can buy to achieve their exploration goals. This new industrial space sector will someday provide fundamental capabilities like communications, power, logistics, and even cargo and human space transportation, just as commercial companies are able to provide these services on the ground. To help develop and bolster this new space industrial sector, NASA and other national space agencies can enable and facilitate in many ways, including acting as both a paying customer, public/private partner, or anchor tenant. The transition from all or mostly government developed and operated facilities and services to commercial supplied facilities and services should be considered from the very earliest stages of planning.

This paper will describe the steps that NASA is taking to create a sustainable exploration and development program and how commercial enterprises are contributing today and propose possible future steps that will grow commercial capabilities to create new markets and a sustainable future in space.