



NAC Commercial Space Committee

1 March 2013



Commercial Space Partnerships Study

- Goal
 - Provide recommendations for fostering and incentivizing commercial space partnerships between NASA and private commercial organizations that will enable NASA to meet its mission objectives in an efficient and innovative manners as well as strengthen US global competitiveness and promote the economic vitality of the nation.
- Study Kicked off September 2012, target completion Spring 2013
- Study Approach
 - Assess which NASA mission areas have potential to result in economic benefit if commercial partnership approach selected
 - Assess current methods through which NASA develops and implements commercial space partnerships
 - Analyze prioritized mission areas for potential economic impact and mission alignment to NASA



Commercial Space Partnerships Study

- Team
 - Strong interest across Centers to participate, led to overall large team with several sub-teams initially totaling 50+ people
 - Areas of interest included:
 - » Economic Impact
 - » Applications of COTS/CRS Model
 - » Stimulation of Demand for Space
 - » Fostering Partnerships
 - » Economic Development
 - » Dual-Use Technology Development
- Mid-term Study Assessment
 - Strong need for integration between areas of interest
 - Determined simple heuristic Economic Assessment Framework tool could be utilized to guide candidate recommendation area documentation and help prioritize the many ideas generated by team



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- Economic Assessment Framework (EAF) Tool
 - Provide an overall economic assessment framework that serves as a thinking-tool when assessing the different options for stimulating commercial partnerships for economic benefit.
 - Qualitative approach, using six core economic vectors: Market, Labor, Capital, Productivity, Technology, Export, Timeframe.

DRAFT Economic Assessment Factors for Commercial Partnership Opportunities and their Approaches

Basic Definition>							
	The size, potential, importance or breadth of the market addressed.	The ease of attracting knowledge, creating jobs with high-skills, or benefitting either total or NASA employment.	The ease of attracting capital, funding, in-kind, private or public.	The degree of improving efficiency, processes, practices, management, or "how" a product comes to fruition. (Industry and NASA)	The degree of contribution to investments in new productivity enhancing technologies/innovation.	Specifically the export potential of the market addressed (incl. attracting non-US capital to the US for services).	The speed with which the expected return on the initiative is expected to come to fruition.
Candidate	Market	Labor	Capital	Productivity	Technology	Export	Timeframe
Reference: COTS/CRS for the ISS.							
Reference: Robonaut, Robotics demonstration to the ISS.							



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- Prioritization process aided in identification of areas for further study of determining U.S. economic potential
 - Space communications
 - Earth observation
 - Satellite in-space servicing
 - cargo transport for beyond earth orbit
 - Interplanetary small satellites
 - Robotic mining technologies
 - Micro-gravity applications for pharmaceuticals and biotechnology
 - Advanced liquid-fuel engines
 - Internal Process methods for enabling commercial partnerships



Commercial Space Partnerships Study

- Study Outcome
 - Supporting data and analysis on areas of economic potential that could support NASA objectives and stimulate U.S. industry to create new markets
 - Process related recommendations to help better enable commercial space partnerships