

NASA's Public Private Partnerships

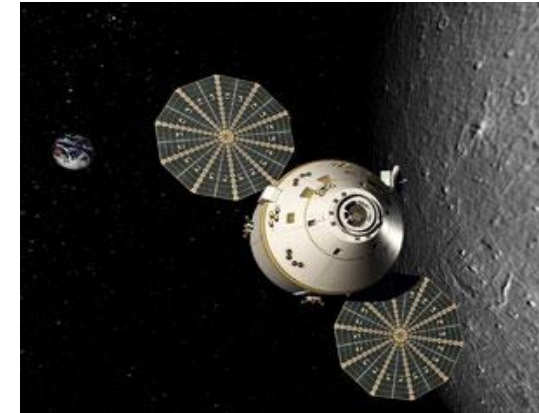
Government-University-Industry Research Roundtable

Phil McAlister, NASA Headquarters
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Background

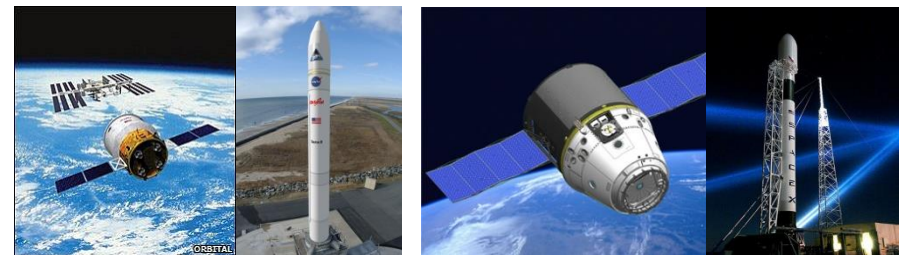


- In 2005, with the phase-out of the Space Shuttle certain, NASA embarked on the Constellation Program, featuring the next generation of traditionally-acquired launch vehicles and spacecraft.



Constellation Program

- At about that same time, NASA began a small initiative to have U.S. private industry build, own, and operate spacecraft to resupply cargo to the space station. At that time, only the governments of the U.S., Russia, Japan, and Europe had built such spacecraft.



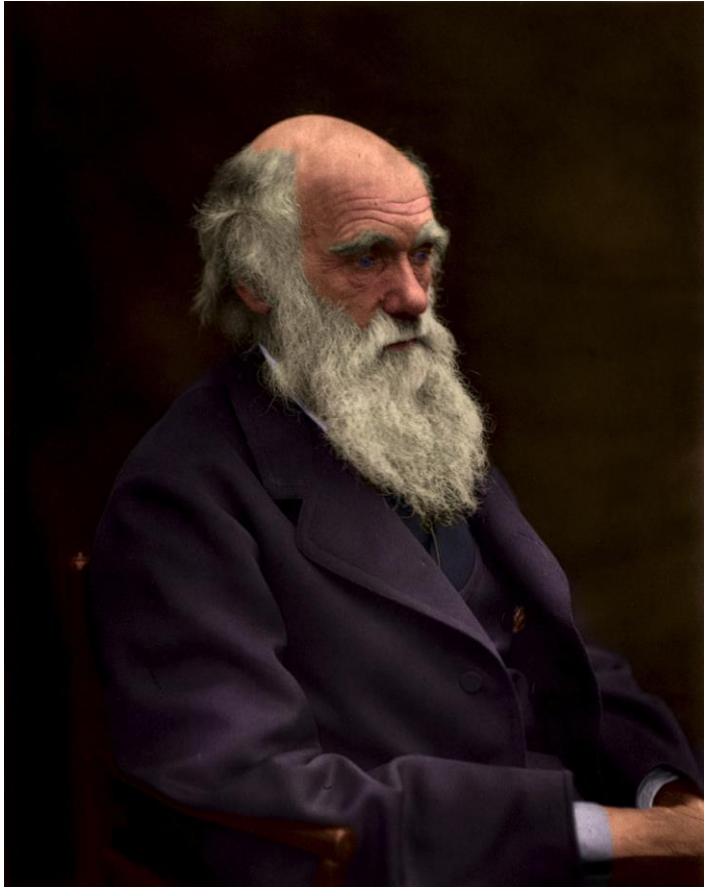
Commercial Cargo Program

Common Criticisms



- The “commercial” approach is unproven and risky.
- Private industry is not financially or technical capable of doing a job that only governments have proved to be able to do.
- Private industry will never be able to produce spacecraft as safe and reliable as NASA.
- Private industry will cut corners in order to make a profit.
- The cost savings are illusory.



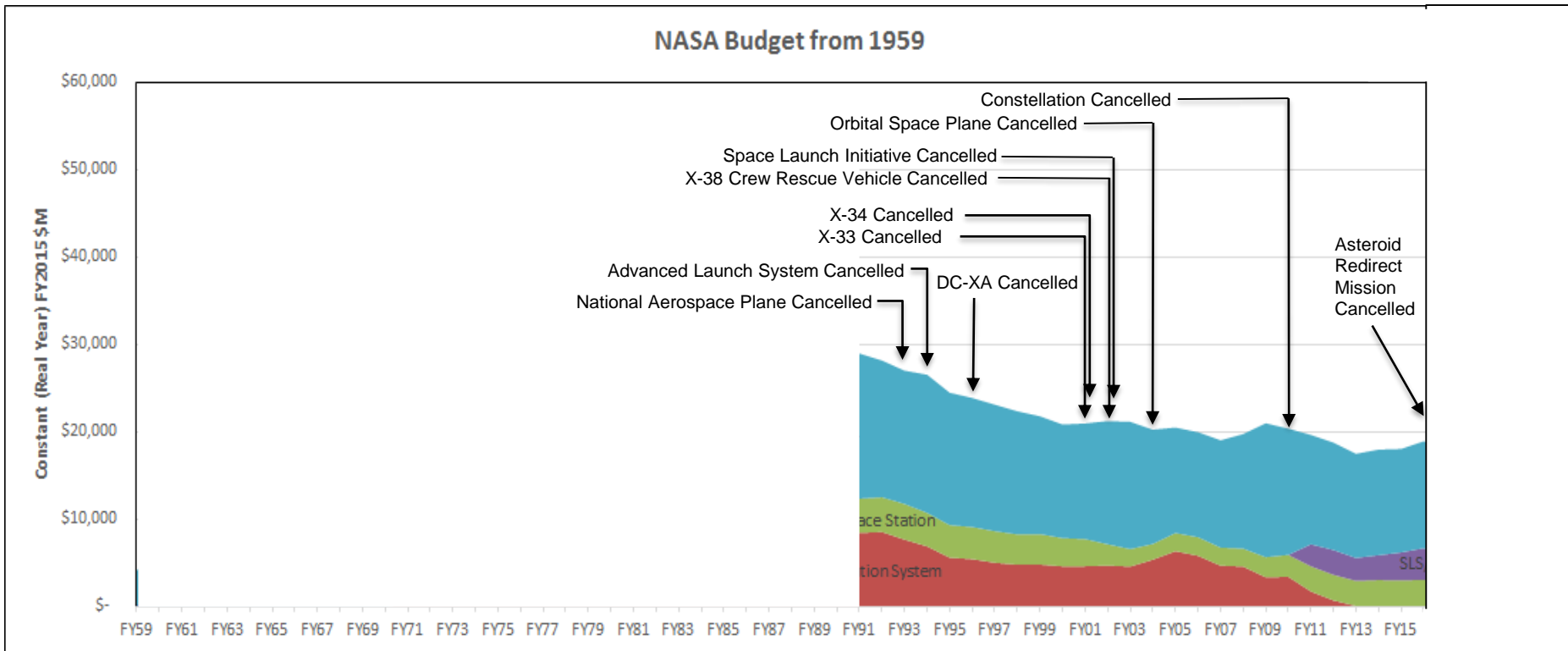


“It is not the strongest of the species that survive, nor the most intelligent, but the one that is most responsive to change.”

“Those who live by the sword...will be shot by those who don't.”

-Anonymous

Why Do We Need to Change?



NASA Acquisition Approaches



Wikipedia defines public-private partnerships as: “Projects between a government entity and private industry where resources, technical capabilities, and risks are shared.”

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Program Characteristics	Traditional Approach
Owner	NASA
Contract Type-Fee	Cost-Plus
Contract Management	Prime Contractor
Customer(s)	NASA
Funding for Capability Development	NASA procures capability
NASA's Role in Capability Development	NASA defines “what” and “how”
Requirements Definition	NASA defines detailed requirements
Cost Structure	NASA incurs total cost

NASA Acquisition Approaches



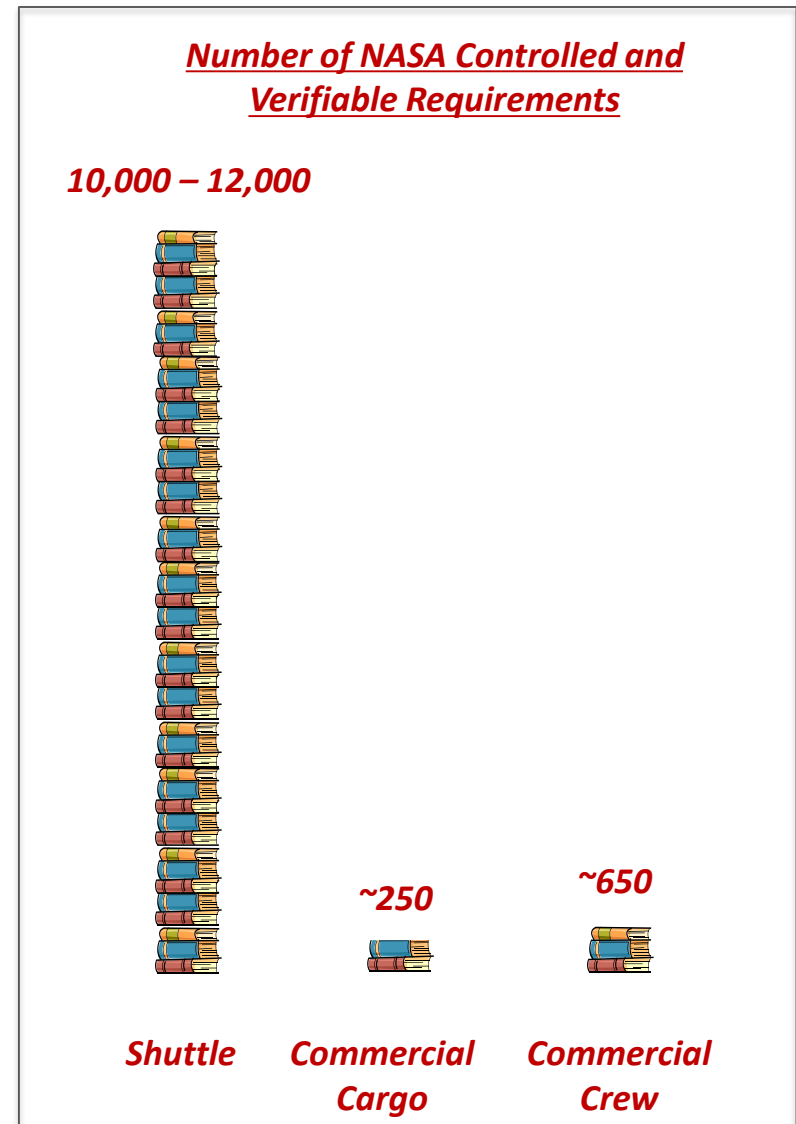
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Program Characteristics	Traditional Approach	Partnership Approach
Owner	NASA	Industry
Contract Type-Fee	Cost-Plus	Fixed Price
Contract Management	Prime Contractor	Public-Private Partnership
Customer(s)	NASA	Government and Non-Government
Funding for Capability Development	NASA procures capability	NASA provides investment via milestone payments
NASA’s Role in Capability Development	NASA defines “what” and “how”	NASA defines “what” and industry defines “how”
Requirements Definition	NASA defines detailed requirements	NASA defines top-level requirements
Cost Structure	NASA incurs total cost	NASA and industry share costs

Requirements



- By NASA controlling fewer, higher level requirements, the companies can determine how best to meet NASA's requirements.
- Allows the commercial partner to accelerate decision-making and control costs.
- It also forces NASA to determine what we need, as opposed to what we want.





Comparing Approaches



- The purpose of contrasting NASA's traditional and non-traditional approaches does not mean one is better than the other.
- Each approach is appropriate for the type of program required.
 - For technically-ambitious, one-of-a-kind programs where NASA is the only customer, production is limited to only one (or a few) of the systems, and which are dependent on significant technology development, then a Traditional Approach is probably more appropriate.
- The Partnership Approach used by Commercial Cargo and Crew was based on several assumptions.
 - No technology breakthroughs were required – we are not pushing the technological state-of-the-art by flying cargo and people to/from low Earth orbit.
 - Very real prospect of other customers beyond NASA – spaceflight participants and microgravity utilization are existing markets with substantial growth potential.
 - Government foundational customer base – the International Space Station represents a long term, repeatable customer base.
 - Strong industrial base – many U.S. companies have demonstrated the capability to develop safe and reliable cargo and crew transportation system(s).

Partnering Can Lead to Superior Results



- Public-private partnerships combine the strengths of the government and the private sector.
 - Government has extensive experience and expertise, and it has access to significant financial resources. Consensus is at a premium.
 - Private sector has a laser focus on cost effectiveness. And, speed is at a premium.
 - The combination of the public and private sectors creates a healthy tension which can enable superior results than either entity working individually.