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# **Innovative Models For Private Financing of Space Science Missions**

## **White Paper**

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***“No bucks, no Buck Rogers”***



▪ ***“The Right Stuff”***



***“Politics Always Wins”***





# ***Why is Humanity Not on the Moon?***





# Why Does the U.S. Not Have a Man-Rated Rocket?





# The Demise of the Largest Federal Lab — 2024





# **Current Space Sciences Funding Environment is Under Pressure**

- . Unclear and Uncertain Strategic Vision**
- . Immense Budgetary and Political Pressures**
- . Reduced Support of MEGA-Science and MEGA-Budget Projects**
- . Growing Realization of Low Cost High Impact Projects**
- . No more “Business as Usual”**



# Different Funding Models

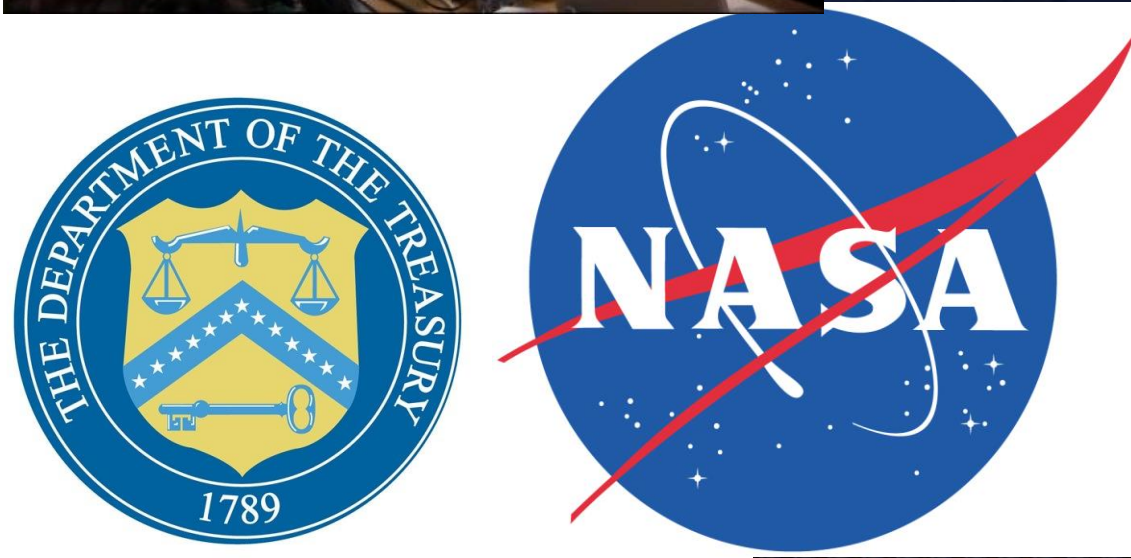
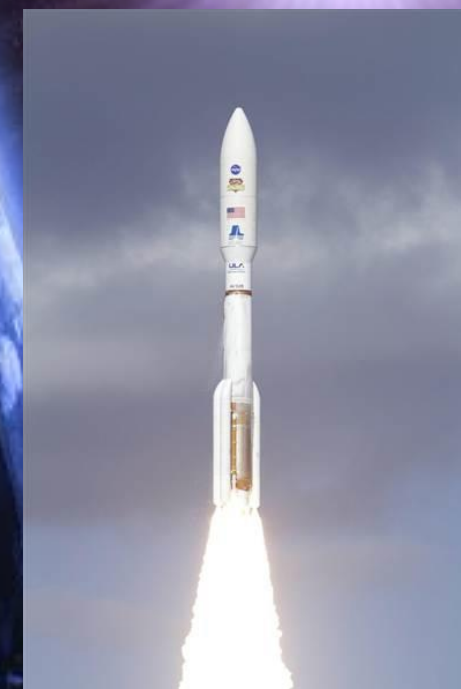
- **Cost Plus**
- **Fixed Cost**
- **Data Purchase (through Private Finance Initiative and/or Public Private Partnerships)**





# Traditional Model U.S. Treasury To NASA

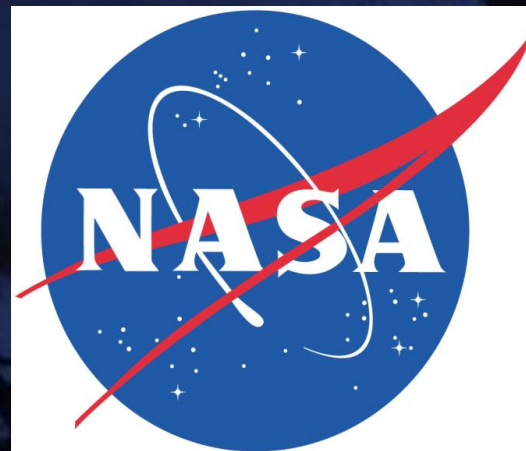
NASA contracts with Industry to provide hardware for NASA to Manage once launched, data provided to the Science community





# The PFI Model:

Funds from US Treasury are Replaced by Private Finance —  
Industry Works Under the Direction of NASA to Provide Data  
to the Science Community





# **Innovative Partnerships & Commercial Infusion**

- **Space Act Agreements**
- **Commercial Infusion**





# UK Skynet 5 Model

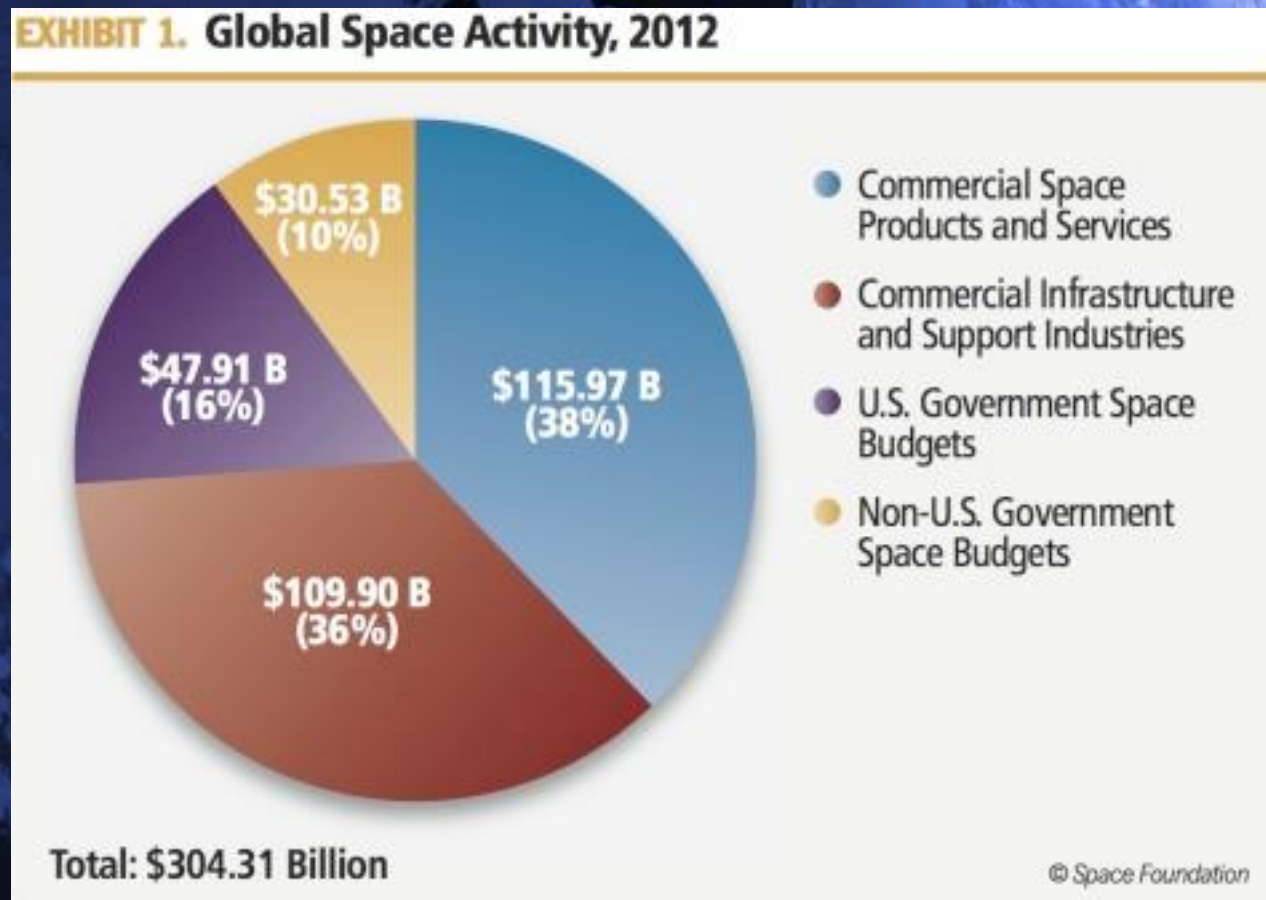
- UK MoD Customer
- EADS is the Builder
- Prime Contractor & Supplier an EADS company “Paradigm”
- Skynet owned by Paradigm
- UK MoD and Paradigm have a Service Level Agreement
- UK guarantees Revenues
- Paradigm assumes risks





# Global Space Spending

*Private sector has large amounts of available capital that could be applied to space projects if governments would minimize or eliminate “market risk.”*





# Xprize & European Space Agency

- Innovation Xprize Foundation & GLXP
- ESA & the Exact Mission Profile of GLXP
- Perceptions of Industrial Policy





# European View of SpaceX

- “SpaceX is selling a dream,”
- “How do I respond to a dream?”
- “Today SpaceX hasn’t launched into the Geostationary orbit yet.”

*June 2013 Richard Bowles Arianespace*





# Recent European Lay-Offs

**“EADS Mulls 20% Job Cuts in Defense & Space Unit**

**...considering cutting its workforce by 20%, or 8,000 employees, at its new Defense and Space division”**

**- November 2013**

**“EADS breaks layoff taboo in plan to cut 5,800 jobs”**

**- December 2013**





# European Realization

“They needed nine times the power of their Merlin 1D engine for their intended markets. In Europe we would have attacked the issue with a beautiful [research and development] program, costing hundreds of millions, to develop an engine with nine times the power. What did SpaceX do? They put nine Merlin engines on the Falcon 9 first stage. The result: Problem solved.”

- Airbus Group Official January 2014 -





# Conclusion

Innovative structures may allow humanity to pursue critical space activities for the benefit of **all humankind**, in a more financially efficient and results oriented fashion.

**Scalability and sustainability.**

**Adapt or perish!**