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Space activities and sustainability

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Cold War and Space race



- Cold War and Space Race ensured the sustainability of space activities fueled by military, prestige and science/technology motives
- Economic and ecological motives are more alibies than real objectives
 - e.g., US Landsat program, economic spillovers
- Sustainability of space activities builds on 3 rationalities complementing each other
 - Military
 - Prestige
 - Science/Technology



- Endangered the sustainability of space activities
 - No longer sufficiently fueled by military, prestige and science/technology motivations
- Space organizations had to reconsider their sources of sustainability and their rationality to prevent the marginalization/collapse of space activities

End of Cold War (2)



- Economic sustainability raised in space activities (including macroeconomic benefits and profits)
 - e.g., Telecommunication satellites
- 3+1 rationalities support the sustainability of space activities:
 - Military, prestige, science/technology, economic
- Ecological sustainability remains marginal and is included in science/technology
 - Space technologies (including Earth observations satellites) are technological solutions useful to better understand whether forecast, climate change, natural resources management, oceanography, etc.
 - Space activities contributed to the rise of ecological sustainability motive among civil society
 - Space activities are assumed as “clean”

6 potential disruptions: New Space

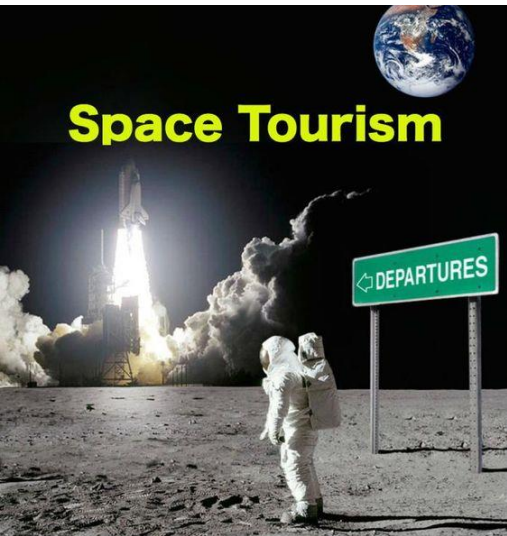


- New Space supports the sustainability of space activities
 - 4 balanced rationalities: military, prestige, science/technology, economic

**FAKE
IT TILL
YOU
MAKE
IT!**

- However, New Space trend remains made up of potential disruptions
 - Many seem viable, but not all of them are

New Space implications on ecological sustainability



- Space activities generate a growing pollution
 - Space debris
- Availability of space environment is at stake
 - Collisions
- Rise of ecological motivation and in space activities
 - Space traffic management

- Increase of space launches, constellations of satellites, space tourism, etc.



- Sustainability in space activities ↔ 5 Rationalities ↔
- 5 motivations
 - Military
 - Prestige
 - Science/technology
 - Economic
 - Ecological
- Sustainability is a dynamic concept
 - Number of dimensions
 - Weight of dimensions
- Space organizations need to broaden their definition of sustainability to integrate the rapid rising ecological sustainability

Thank you

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