

BUSINESS INNOVATION SYMPOSIUM (E6)

Innovation, Entrepreneurship & Investment: The Microscopic Perspective (1)

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DEVELOPMENT ROADMAP AND BUSINESS CASE FOR A PRIVATE MARS SETTLEMENT.

Abstract

Mars has long been considered the next target for human spaceflight after the Apollo missions. NASA has made this clear in the past, with their many architecture proposals for crewed Mars missions. All these proposals, from the Space Exploration Initiative to the current Journey to Mars, highlight the priorities and constraints of a government agency: extreme risk aversion, long development times, and risk mitigation and science maximization through high mission cost. The lack of a need for revenue and an expected financial security can also be seen in the architectures, which pay little attention to financial feasibility, and focus on technical aspects. Despite all this planning, government agencies have accomplished little beyond LEO since Apollo. A fully public mission to Mars seems always further away, and little progress seems to be done in that regard by the public agencies.

In recent years, a new approach to space has appeared in the form of the New Space companies. These companies enjoy some advantages over government agencies: clear strategic goals, financial stability, and higher tolerance to risk. These are created by the private source of funding, which requires a source of revenue and a business plan, and is relatively independent of public opinion, which allows the companies to take higher risks without justifying their expenses to the public. Private companies have also shown in recent years that they have the technical abilities to produce space hardware of the same quality as government agencies, with a surge of a new generation of rockets and satellites, so it would seem that they are better posed than these agencies to undertake a mission to Mars. The only piece missing is the business plan that would allow a private company to fund itself during the process.

This paper defines a possible mission architecture and business plan for a private company to establish a Martian settlement, identifying sources of revenue and customers, and technical constraints. It outlines a development plan leading to the first crewed landing on Mars before 2030, and studies the steps for the establishment of a permanent settlement afterwards. The intention is to show the other extreme of Mars architectures: fully private funding, and very time constrained. This would add a new point of view to the field, and hopefully lead us to the much desired human landing on our red neighbor in the near future.