

BUSINESS INNOVATION SYMPOSIUM (E6)
New Space Markets + Investment Opportunities (3)

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MARKET CHARACTERIZATION: LAUNCH OF VERY-SMALL AND NANO SIZED PAYLOADS
ENABLED BY NEW LAUNCH VEHICLES.

Abstract

Recent yearly launch forecasts issued by the U.S. Federal Aviation Administration have identified emerging markets within the overall global launch industry. One such new market is launch of very small orbital payloads enabled by the emergence of nano to very small launch vehicle concepts. These concepts include:

- Virgin Galactic's plans to use the White Knight Two vehicle as a platform for a small satellite launch vehicle
- The Canadian Space Agency's expressed interest in developing a microsatellite launch vehicle
- Small launch vehicles in various stages of development at companies such as Interorbital Systems and Microcosm Inc.

This paper addresses the significance of an emerging new segment of space launch demand— launching of nano (10 kg) to very small (100 kg) class payloads into orbit via these launch vehicle concepts (both suborbital and orbital). The market segment targeted by these vehicle concepts is traditionally covered by multi-manifesting and secondary payloads. However, the interest in these sorts of vehicles may presage growth in this market segment within the context of the overall LEO and suborbital markets. This paper characterizes this emerging market segment, by loosely following the Industry Structural Analysis methodology, which has been successfully employed to analyze other segments of the space launch market. In characterizing this market segment the following factors are addressed:

- What factors are driving the emergence of the market?
- Who are the players in the market, both on the supply side (launch vehicle operators) and the demand side (payload operators)?
- How does this emerging market interact with and/or compete with other emerging markets, such as space tourism and commercial reusable sub-orbital launch services?
- Consideration of impacts to other aspects of LEO activities, including regulation and space traffic management.
- Military and security implications, including potential defense value of the launch vehicle concepts being discussed.

Emergence of a distinct launch market for payloads in this class would represent a segment previously not fully accounted for in industry forecasting and planning. Accordingly, early description of the characteristics of this market is an important first step towards understanding overall impacts and significance.