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FIRST-MOVER ADVANTAGES IMPACTING SITE OCCUPATION TIMING AND METHODOLOGY BY COMMERCIAL LUNAR RESOURCE FIRMS.

Abstract

Research concerning the advantages and disadvantages accruing to first-movers in multiple industries and endeavors indicates that first movers face multiple challenges in their quest to be "first to market". However, a general conclusion regarding the net sum of advantages and disadvantages cannot be made as the specific circumstances surrounding each case study are generally unique to an industry, a market, or a time period.

The nascent lunar commercial resource industry is one such unique case. But for even traditional terrestrial industries, the market entry decision making process gives great weight to two factors which take on even more importance within the context of lunar resource site selection and its impact on the firm's potential competitive advantage: 1) access to scarce resources and/or real estate and 2) the ability of "early followers" to imitate, or reproduce, the same results as the first-mover.

With these factors in mind, the evolving law regarding space resource collection operations by private firms would seem to suggest that firms who wish to maximize their competitive advantage should move early. This conclusion is supported by provisions of the Outer Space Treaty which dictate that, while no entity can "own" extraterrestrial real estate, they can use it. Critically, the Treaty's non-interference clause then protects the user of the real estate from interference by others.

Thus, considering that the most optimal lunar resource collection site will need to possess a unique combination of several rare features (nearly constant sunlight in close proximity to permanently shadowed areas near viable concentrations of ore with a short and obstacle free route of travel to the ore bed), early occupation of the most optimal site may provide a critical and non-imitable long term competitive advantage to the firm able to move first.

As such, this paper will explore how these factors might impact decisions regarding the strategic timing of market entry and/or initial site occupation of nascent resource collection firms.

Finally, once a firm decides to pursue a first-mover strategy, the race to characterize and occupy the site possessing the greatest competitive advantage will be on. This paper will conclude by considering the potential impact on the ability of the firm to quickly occupy the selected site as a function of two types of methodologies: a hybrid human/mechanical approach vs an approach using solely robotic operations.