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BETWEEN WHISTLEBLOWING AND CARTELLING: A GAME THEORY STUDY ON
TRANSGRESSIONS OF LUNAR SOCIAL LICENSE TO OPERATE

Abstract

The term “Social License to Operate” (SLO) indicates a series of measures agreed between a mining company and the community where it operates with the goal of establishing guidelines for fair and sustainable extraction activities.

The applicability of SLO within the context of space activities has been firstly introduced by the Socio-Economic Panel of The Hague International Space Resources Governance Working Group. This work suggested that SLO might provide a conceptual framework through which affected sociocultural, heritage and environmental factors might be considered in governance. Since then, the topic has been further researched by the Space Exploration Project Group of Space Generation Advisory Council which at the latest International Astronautical Congress presented a first follow-up research investigating the foundational aspects for the development of a Lunar SLO.

Building on these pioneering studies, this paper considers the different scenarios that may arise from the transgression of a given Lunar SLO. This is because the combination of the flexible nature of SLO with its voluntary character provides opportunity for cartel behavior by means of economic incentive for a win-lose scenario, whereby companies have more to gain in covering each other’s violations than in complying with the rules. At the same time, the desire to remove competition in a potentially monopolistic environment may drive lunar operators towards whistleblowing behaviors by “naming and shaming” the violations of their competitors.

Through the application of game theory concepts, the proposed paper aims to demonstrate potential outcomes within a theoretical SLO-governed lunar economy similar to the classic “prisoner’s dilemma”. Conversely, the proposed paper will also discuss how a properly designed Lunar SLO should be able to minimize the opportunity for cartel behaviors and enhance the sustainability of lunar activities, thus supporting the realization of a win-win scenario, one that can bring benefits for all parties – companies, governments and society. To this end, the paper will conduct a case-study examining analogue situations within the recent practice of both the space sector and the terrestrial mining industry, with a special focus on the role that could and should be played by national regulators.

Lunar exploration is expected to represent the best in all of humanity. If properly discussed and designed, the implementation of effective Lunar SLO practices can prove that sustainable progress and economic growth can go hand in hand for the benefit of all countries and humankind.