The Moon is a Land without Sovereignty: Will it be a Business-Friendly Environment?

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Article II of the 1967 Outer Space Treaty (OST) states that, *"Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."*[1] There is a simplistic misinterpretation that these few words mean that space is "free for all" and that no nation and no person can own anything in space. Some people argue that without the ability to own property in space commercial, firms will not invest and develop space businesses. Currently, the primary thrust of this argument centers on the ownership of real property on the Moon and the ability to use lunar resources for profit-making activities. National Aeronautics and Space Administration's (NASA's) recent invitation to both domestic and foreign entities to develop commercial opportunities on its planned lunar base and settlement about 15 years hence has further stimulated discussion of this issue.

A full discussion of property rights in space is complex and beyond the scope of this short article. However, the ownership of real estate on the Moon is neither a necessary nor a sufficient condition for investing in a lunar business with the ability to receive a fair return on that investment. Even terrestrially, profitable businesses often do not own the land or the buildings they occupy. They use different types of legal contracts including: leased property, condominium ownership agreements, cooperatives, and other risk-sharing agreements that businesses find perfectly suitable for profit-making activities. Property ownership is an option, but not a necessity. In short, ways can be found by the various governments involved in lunar activities to encourage business investments when, and if, companies identify potentially profitable activities.

The most important concern for private businesses in space activities is not property rights. It is the ability for a company to make a rate of return on a new investment that is greater than the return it can get from other investments. The length of time to realize that return is also very important. A typical business plan forecasts returns over a relatively short period (usually five years, but it can sometimes be slightly longer). A space activity that may not materialize for 20 years is well beyond any real business plan that most companies would consider today. Far more important business risks than property rights would have to be overcome to provide incentives for companies to put today's cash into a future lunar enterprise.[2] For space commercial investments, governments should deal with current problems, not the hypothetical (and solvable) legal issues that will not have true definitions and meaning for at least another generation.

The issue of sovereignty is more directly concerned with having a government or intergovernmental organization guarantee the protection of the right of that business to use the land or resources and not to encounter competing claims on the land from others.

Property rights and national sovereignty exist in a limited form in space today. Anything launched into space is owned by the nation or individual (including companies) that launches it and they are financially responsible for damage to other objects, whether in space or on Earth.[3] Nations have agreed to recognize sovereignty over some space equipment and facilities, such as the International Space Station (ISS) where the governing multilateral agreement specifically allows the nation owning a module to assert elements of sovereignty over that portion of the ISS.[4] Also, intellectual property rights on the ISS are allocated through special provisions of the Space Station Agreement.[5] The United States space policy considers satellites owned by the US as part of its sovereign domain.[6] Taking and using resources from the Moon is not specifically prohibited by the OST, although certain considerations such as limits to environmental damage have to be adhered to.[7] Use of the spectrum and orbital positions are granted through the International Telecommunications Union. Although these are not traditional property rights, they do reserve very limited bands of the spectrum for exclusive use by governments or businesses, albeit for a limited time.

Outer space is regulated and controlled by treaties, governmental legislation and policy, and through common practice. There are many types of property and many types of property rights in space just as there are many types of property and property rights terrestrially. In fact, in capitalist nations property rights are essential for the smooth operating of a profit-motivated private economy. The same conditions are expected to apply to space activities, at least by the major capitalist nations planning space exploration, and exploitation.

The myth that ownership is prohibited in space has led to misunderstandings about the potential for commercial use of space resources and to a call for the negotiation of new treaties. This is unwarranted and would likely result in many years of more rather than fewer rules and regulations being in limbo because:

- The treaties in place, although not perfect, provide a foundation for space activities that have become customary international law and establish basic principles of behavior that are accepted by all space-faring nations.
- Renegotiating the treaties could put all current provisions on the table for discussion and create more commercial (and political) uncertainty rather than less.[8] This would have a negative effect on business investment decisions because of increased perceived (and possibly real) risk.
- Commercial proposals for using lunar resources are currently only "powerpoint businesses." No private lunar

activities that threaten resources or environmental damage are imminent. None of the business proposals can establish a business case that has attracted both sufficient investment funds and has demonstrated the potential to make a profit.[9] Negotiating rules or specific changes now to accommodate a theoretical future business could jeopardize a truly valid business opportunity.

- Most of the governmental and private sector attention is on the Moon. A prerequisite is for research and development programs that will prove or disprove the value of lunar resources for sustaining human life on the Moon and/or discovering new and valuable uses for lunar resources. At least in the near future, these activities will be carried out by government(s) or private partnerships with governments; any commercial participation will necessarily be heavily influenced and regulated by the respective governments.

The present series of the five space treaties are not perfect.[10] The OST has been ratified or signed by 64 percent of the member nations of the United Nations (UN); the other treaties have been signed by many fewer nations with the Moon Treaty ratified by only 12 of the 192 nations. The language of the treaties and definition of key words is not entirely consistent, either among the five treaties or in the translations among the various official languages of the UN. Many key terms, such as space object, launching state, and "exploitation, exploration, and use" are defined so loosely in the treaties that they are still subject to international negotiations, which have failed to provide definitive interpretations. For example, the Registration Convention does not provide for the transfer of ownership in the event of a sale, bankruptcy, lease, or other business transaction.[11] And that convention leaves the interpretation of what a space object is and the timing of the actual registration with the UN up to the reporting State.

The enforcement of the provisions of the treaties is weak. It is left to negotiations between aggrieved parties and, if that fails, the formation of a UN Commission to make recommendations to the affected nations. This can become a lengthy and uncertain path for a possible commercial dispute. The International Court of Justice does have final authority within the present construct of legal appeals.

The focus of the currently debated issues is primarily with the right of a nation or its citizens to claim physical property and resources on the Moon and to use that property for political, security, or commercial gains. The treaties clearly prohibit a declaration of sovereignty over the lunar territory; they do not prohibit the use of that property. But the treaties do limit use. Limitations include military operations and environmental damage. Another provision that can interfere with commercial operations is the requirement of a right of others to travel through the property as well as visit the facility.[12]

As the US prepares for its return to the Moon, NASA has identified parts of the lunar South Pole for establishing a base of operations. What were mainly far-future questions about land and resource ownership on the Moon are beginning to become real questions that need answers. At present, most of those issues are more relevant to government programs rather than commercial questions. With the invitation from the US for other nations eventually to develop commercial enterprises on this territory, additional questions that the current treaties are unable to resolve are raised. Specifically,

- Are there plans for the exploration, exploitation, or use of the Moon? Does it matter which one of the objectives is claimed by the nations or enterprises?
- Will the US "claim" the property itself and use some type of system to defend the property?
  - Since any equipment put on the Moon is owned by the nation that built and launched it, is defending property the equivalent of defending the territory on which it is placed?
- Is such a "claim" a declaration of sovereignty?
- Will lunar resources be owned by the user? Are rights similar to those of some nations on the Earth where the owner of the property also owns everything beneath and above the property? If so, how far down or up might the rights apply?
- What does the phrase "province of all mankind" in the Moon Treaty mean? What are the positions and roles of nations that do not have the technology to access the Moon?
- If other states claim the right to use parts of the Moon, can companies wishing to use that territory "forum shop" for jurisdictions with lenient laws?
- What will the status of intellectual property developed on the Moon be?
- Will provisions, regulations, and negotiated agreements concerning the Moon also be applicable to other celestial bodies such as asteroids? Will they be applied to other aspects of space such as orbital paths?
- Finally, there is an assumption by NASA and by the US government that the US will be the first nation to return to the Moon. It is important to remember that other nations also have plans and the potential to establish bases on the Moon. If another nation is first, what legal claims and perhaps precedents will they establish? What might be the US policy on sovereignty and property rights towards someone else getting to the South Pole of the Moon and putting equipment there first? How might this change the tenor of international negotiations?

Answers to these questions will be important for commercial activity to develop in space. The fact remains that commercial business for profit on the Moon is at least 15, if not many more years ahead. Trying to establish specific rules for some type of activity that is yet undefined is pointless. History has shown that when a profit potential truly exists, and real capital is invested by private firms to earn that profit, governments make every effort to find ways to make it work.

A case in point is the Aérospatiale-BAC Concorde supersonic transport (SST). The technology for the SST existed well before the commercial plane was built. It took about 15 years of development before the Concorde was tested and ready for commercial passengers. In order to get landing rights in the United States it technically had to conform to the Federal Aviation Regulations (FARs) that govern all commercial planes. The Concorde was not in compliance. The US Department of Transportation (DOT) negotiated waivers to those FARS and imposed special rules that permitted the Concorde to fly and land in the US for 25 years. In

spite of the fact that it did not prove to be a profitable airplane, governments found ways to accommodate the new technology and allow the companies to operate commercially.

Another example is human sub-orbital flight. Actual business operations are still in the future, but with the success of SpaceShipOne (built by Scaled Composites, LLC) winning the X-prize, the potential was proven. In the United States, Congress passed a bill requiring the DOT and Federal Aviation Administration (FAA) to propose rules to encourage this activity and to provide sufficient regulations to protect the public.[13] In December 2006, these rules were finalized and published by the FAA.[14] Whether or not the companies planning to offer the flights publicly succeed or not, the legal and regulatory system responded in a timely fashion.

Finally, returning to the issue of the ownership of property rights, it has been proven many times that governments find ways of guaranteeing the ability for companies to make profits, even if the ownership of land itself is not permitted. In the former Soviet Union, all real property was owned by the government. Western companies that saw profit opportunities in the large potential market within the Soviet Union needed assurance that their investments and property located within the Soviet Union would be protected. The solution was a special government organization within the Soviet Union that provided guarantees to those companies similar to property rights in a western society.

It is likely that some form of inter-governmental accommodation will be found for private space activities at the proper time and with the proper limitations. The most important incentive for a commercial enterprise is the assurance that a fair rate of return can be made on a capital investment. That assurance can be accommodated through many avenues that may *or may not* involve the actual ownership of the land and resources. It will be up to future negotiations on specific business projects to find the appropriate means to provide those incentives, but only when a real, not a hypothetical problem, exists.

Between the flexibility of the OST and the many precedents in the history of terrestrial business activities, it is clear that solutions can be found to not only permit, but also provide incentives for private business to exist on the Moon and in other outer space ventures.

Notes:

[1] Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (1967), Article II, 18 UST 2410, 2413 (1969).

[2] For example, reducing the up-front cost of launching payloads into space and/or reducing the risks of launch failures.

[3] Outer Space Treaty (OST), and the Liability Convention, Article VII (see note 10, below).

[4] Agreement Among the Government of Canada, the Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States Concerning Cooperation on the Civil International Space Station (1998), http://www.nasa.gov/offices/ogc/international/Intnl_subst_areas_text.html.

[5] Space Station Intergovernmental Agreement.

[6] "US National Space Policy," fact sheet, White House, US Office of Science and Technology Policy, released October 2006, www.ostp.gov/html/US%20National%20Space%20Policy.pdf (accessed on 23 January 2007).

[7] OST, see note 1.

[8] For example, the provisions of the Law of the Seas Treaty that call for equitable sharing of both profits and technology associated with mining of the sea bed was found unacceptable to the United States. A compromise was found with the New York Agreement of 1994 which set up an international Administration which grants permits for mining the sea bed and acts in "commercially... ways." (Agreement relating to the Implementation of Part XI of the United Nations Convention on the Law of the Sea of 10 December 1982, http://www.un.org/depts/los/convention_agreements/texts/unclos/closindxAgree.htm. It is interesting to note that this compromise was not needed until it was shown that there were resources in the sea bed that had true commercial potential and companies were in position with the technological capability to actually get those resources profitably. A similar commercial showing on the Moon or other celestial bodies has yet to be found.

[9] Where profits may be indicated in these proposals, they are based on either a time frame that is well beyond normal business plans (i.e., greater than 10 years), and/or require very significant government subsidies. None of these proposals can stand alone as competitive commercial investment opportunities.

[10] Apart from the OST, these include: the Liability Convention (cited in note 1); Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (1968), 19 UST 7570 (1969); the Convention on Registration of Objects Launched into Outer Space (1975), 28 UST 695 (1978); and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979), 1363 UN Treaty Ser 3 (1984).

[11] Registration Convention, see note 10. But it should be noted that a clear definition of what are military operations, what is environmental damage, and what types of passage and/or rules for "visitation" does not exist. When disputes arise over these issues in the future, either negotiation between the parties involved and/or a lengthy legal battle and judicial interpretation may occur. Alternatively, the parties with the potential to use the Moon may be able to negotiate specific contractual agreements before a problem occurs. Whether such contractual agreements will or could become customary international law is, of course, unknown at present.

[12] The Moon Treaty goes further than the OST in prohibiting any military bases on the Moon (Article 3). Article 4 states that: "The exploration and use of the Moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations." This is interpreted by some to mean that technology and profits have to be shared by all nations and is one of the major reasons that the Moon Treaty has not been ratified by very many nations (including the United States).

[13] US Congress, HR5382, Public Law 108–492—Dec. 23, 2004 Commercial Space Launch Amendment Act of 2004.

[14] Human Space Flight Requirements for Crew and Space Flight Participants: Final Rule (pdf)-211, http://www.faa.gov/about/office_org/headquarters_offices/ast/human_space_flight_reqs/.

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