Space Law and the Galactic Economy: The New Frontier

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In 1961, Yuri Gagarin was the first man to venture into space; in 1969, Neil Armstrong became the first man to take that a step further by landing on the moon. Between that period, in 1967, the Outer Space Treaty went into effect, being ratified by 105 nations. Currently, the space market is worth approximately $400 billion. The commercial space industry is heating up – 50 years ago, outer space was reserved for the most powerful of nations and the most dominant governments, but today there is a democratization of space. The commercial industry is inching us closer to the cosmos and in the process, there is a growing interdependence between what is happening hundreds of miles up into space and down below on Earth. The commercial space industry, using multi-million-dollar rockets and satellites, is increasingly playing a part in our everyday lives. Although you may have been hearing about this phenomenon in recent years, this launch into the new world has been ongoing for decades.

There have been five space treaties that have been negotiated since the 1960s. Four of which are widely ratified, however, the Magna Carta of space law, the Outer Space Treaty, is the document that all space lawyers turn to when considering anything happening in space. Recently, NASA Astronaut Anne McClain was accused of illegally accessing her spouse's bank account whilst aboard the International Space Station; this brought up a variety of legal issues and questions about how to litigate a crime committed in space. Is outer space devoid of law? Is it a vast lawless domain? Of course, it's not. The treaties govern countries and the activities of countries, but it also materializes a new dimension. The treaties make states

responsible for the activities of their nationals, creating domestic regulations so that nations carefully watch and regulate the activities of those who venture into space.

This brings about the question of property rights. Where does space begin and if there is a dispute in space, who decides it? Australia is the only country in the world that defines where space begins; defining it as 100 kilometers up. However, where the air ends and the air law regime, which is governed by the International Civil Aviation Organization, and where space begins is a matter that the international community has not been able to agree on. People either want to set limits, set a height based on kilometers like Australia has done, or they take the approach of the United States who look at it as a use; what did you use, are you launching a rocket that is intended to go into orbit or are you just launching a plane that is going to go high into the air. This is important because nations own the air over them. Right now, space is for everybody. No nation can own property in space and no nation can make any territorial claim in space.

You need consent to fly over another country if you are in the airspace, but on the flip side of that, if you believe that you are in outer space, you can fly over any country without consent and engage in espionage legally. Espionage is one part of the political-military contest, but how else is space dealt with from a military perspective? With the recent establishment of the United State’s Space Force, we will likely see the same rules of war extended into outer space. The language in the Outer Space Treaty about the use of outer space for exclusively peaceful purposes, is beautifully aspirational language, but the devil is in the interpretation: what does it mean to use space for peaceful purposes? The way that this has been virtually explained is that peaceful purposes only prohibit the aggressive use of military force and as long as you are not engaged in naked aggression, then you are peaceful in your use of outer space. Another

restriction is the stationing of weapons of mass destruction in orbit; but it would be naive to believe that the military will be devoid of war. Especially now that the United States has a Space Force, it is all perfectly legal, and it all depends on the course of action that the Space Force will take. At the end of the day, the Space Force is about manufacturing a bureaucratic and political constituency for orbit, whilst simultaneously investing in spacecrafts that can defend themselves (and attack, if necessary), new space sensors to track enemy missiles, and military habitants who are trained in the craft of zero gravity. This means a great deal of money for private companies, with almost half-a-dozen defense agencies already fueling millions into space start-ups that build everything from radar networks to high-tech materials.

The majority of the money made in space lies on the back of satellite-provided services, and these services are likely to surge the space economy. The significant increase in satellites (currently there are approximately 2,300 operational satellites in space) will bring a multitude of costs and benefits. The spur in investments in new satellite servicing businesses will rise until it reaches space itself. We have seen an uproar of venture capitalists directing millions of dollars towards small satellite companies with big aspirations, such as Spire, Capella Space, Hawkeye360, and Swarm. But these are just a few of the firms who have reeled in massive amounts of cash and launched satellites. And each of these firms varies in the shape of their business models, from communicating with internet devices to tracking radio signals in order to gather radar data and image every angle of the Earth. This all falls on the cost of building and operating a spacecraft to enable the work that they desire.

SpaceX and Boeing are officially in the final phase of their private space transportation service in cooperation with NASA. Soon enough, both companies will have permission to start

flying up wealthy tourists, who seek to site see the constellations, or corporate researchers who will aim to find clues in fixing the Earth they just departed from. The uncertainty is there, however, so is the promise of new opportunities for the private sector and new influxes in revenue. Space tourism is nearing existence with Richard Branson from Virgin Galactic stating that the firm has the capital to begin regular tourist trips to the edge of space; and although the seat on this flight costs $250,000, I doubt you will be served peanuts on your way up. On 27 May 2020, NASA launched astronauts into space from U.S. soil for the first time since 2011; these astronauts voyaged to the International Space Station via a vehicle that was purchased from SpaceX.

Ultimately, NASA's main focus, is returning humans to the moon. With access to ice water that was discovered on the moon, starry-eyed space seekers see this as the key to the grandest visions of a future space economy. However, it is still unclear whether the United States government can settle the conflicts between its dreams for space exploration and its willingness to alter the way in which NASA does business to the point of establishing a sustainable presence on the moon. But NASA is still continuing its efforts to bolster the space economy by hiring private companies to build rovers, landers, and spacecrafts that will carry scientific instruments to the moon. From an economic standpoint, this program is likely to reinforce the knowledge of private companies when it comes to operations on the moon.

The trends that pilot the optimism towards the space economy are the same as those of the tech economy: the growing power and miniaturization of transistors, solar panels and batteries, partly generated by the smartphone revolution of the last century; the rapid evolution of broadcast media, telecommunications, commerce, and the internet as a whole; and, of course, the geopolitical tensions that have

governments anxiously spending on space through the hiring of private companies. The voyage into space is not far, and the economy that will manifest from it has already proven to be grand. All in all, this is simply one small step for man, one giant leap for the private sector.

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