

Lessons from Understanding and Developing the Community in Space™: The reality of consulting, financing and investing in a geopolitically dominated space domain

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Despite the exciting potential for commercialization of the Space Domain and connecting space to general audiences, these goals will be difficult to achieve if commercialization continues to be primarily an extension of nation-state interests and security matters. We believe there is a better way, involving space-centric international economic development that produces benefits on a global scale.

Caelus Partners is a consulting, financing, and investing company focused on space and space-related technologies to create effects in the Space Domain and on Earth. We work with startups, investors, space agencies, government and non-government organizations and their contractors (both inside and outside the Space Domain) to address solutions for investments and creating investment opportunities. We operate globally, and the increasing interest in space around the world means that our daily business continues to grow. Because of the environment we operate in and the complexity of the dynamic, our company created a business campaign, called Community in Space™ to address the challenges that come with the work that we do.

Our team as a private company has invested time and resources to support international dialogue and has participated in key and decisive events that have resulted directly and indirectly in a significant number of financial and government transactions globally. While we are a company headquartered in the United States with multiple members who have served the U.S. military and deeply care for our country, we also believe that space should continue to produce benefits at a global scale. We are engaged in delivering solutions for clients, and we know that financing and investing for space must be global if we want an industry that flourishes for the betterment of as many as possible.

This is our first publication since the beginning of the Community in Space™ campaign to articulate what we have observed, what we will do, what assistance we require, and opportunities to participate. Community in Space™ is well beyond what Caelus Partners can do and will do on its own. This is a call to action for industry, general audiences, governments, and individuals of influence to build upon humankind's successes in space for the benefit of our planet.

Our Observations

As 2018 came to an end, our team of eight individuals — with the help and at the request of related advisors, government officials, supporters, and clients — completed the first phase of our campaign to understand and develop the Community in Space™. This phase, which lasted around 18 months, was focused on determining the level of commercialization of the Space Domain can be within the current geopolitical dynamic. The questions we ask in this campaign have far-reaching consequences for all stakeholders associated with the Space Domain and its related activities. To familiarize yourself with the most current version of the campaign, feel free to connect with us by our email contacts (below) or on our LinkedIn pages.

Through this campaign, our team has applied the lessons learned from decades of consulting and from conducting business in ungoverned areas on Earth with significant regulatory oversight. These insights are highly applicable for those who seek to address Space Domain issues with respect to policy and investments. Our team has had “boots on the ground” in almost all spacefaring nations and has been able to build and maintain dialogue about space in the most difficult of geopolitical situations, and has had success moving commercialization of the Space Domain forward. Our knowledge and expertise into the financial trends, geopolitical relationships, and investment models when it comes to the Space Domain are unique and are sought after by family offices, banking institutions, and government agencies.

Our work on the campaign has led us to some observations that we wish to share openly, although in some cases the details are proprietary and cannot be discussed in this setting.

1. Commercialization of the Space Domain is a national security matter. The nation or coalition that first succeeds in truly commercializing its space industry will have a security advantage that may last for decades.
2. The principles for developing a community in the Space Domain are not clear to anyone, but we know that the results will likely be catastrophic if people follow the default approach that has been used throughout human history in every era of discovery and exploration.
3. While only a small number of people on Earth worry about what happens in the Space Domain, even fewer worry or attempt to understand what is happening in terms of space-related economic development on Earth. Economic development needs to be much more comprehensive than pie charts explaining how much was invested in space, space-related technology, and terrestrial spinoffs.
4. There is amazing and unseen talent on Earth to develop the technologies to be successful in the Space Domain. What is lacking is the ability to understand and mitigate risk to make the investment into the talent pool to work. Further, many of these talented individuals are not identified easily because their work is focused on areas outside the traditional space industry, or they operate from countries where their talents are not respected unless they are dedicated exclusively to government projects.
5. Most current government-based requirements are unlikely to deliver innovation — technology that is developed or improved upon to create a consumer when there was not one previously. However, government-based requirements for the Space Domain have been spurring disruption and increasing efficiency in certain regions of the world.
6. There are very few integration opportunities and investments that cross from Earth to Space and from Space to Earth.
7. Most private equity or private venture funds focused on investing in the Space Domain or space-related industries have an investment thesis tied to corporate M&A or to government control. This approach deters technical collaboration across national boundaries and reduces outreach to general audiences. This also limits the ability for private wealth to be involved and allow for growth as other markets on Earth.
8. There is a lack of clear terminology to describe the business landscape of the Space Domain. The situation is confusing in part because of advertising terminology (e.g. NewSpace, Space 2.0) and U.S. government contracting terminology (e.g. private, commercial, civil, and military), which makes it challenging for some investors to understand the Space Domain in the context of their previous experiences.
9. Leading international organizations like the United Nations Office for Outer Space Affairs (UNOOSA) are doing what they can to advocate for the integration of non-spacefaring nations. However, as in the defense and security sectors, this integration is constrained by the interests of the spacefaring nations that currently dominate.
10. Commercialization of the Space Domain is not primarily a technology, policy, or intellectual property integration matter — it is an economic development matter that requires us to think about the individual consumer, not just business customers.

Where We Stand Today

In light of these findings, as well as some others, Caelus Partners has taken a number of concrete steps to maintain contact with the situation and improve commercialization outcomes.

- One highlight was the establishment of the Caelus Foundation in early 2018. This nonprofit organization provides opportunities to communicate and dialogue on many of the items listed above in a manner that is transparent and accessible to general audiences around the world. In the coming months, you will see announcements of events that we are going to support in partnership with other nonprofit organizations to advance the dialogue on commercialization of the Space Domain.

- On the business side, Caelus Partners engaged with multiple locations around the world to identify and act upon the opportunity to develop local economies that support space and integrate space into their regional economies. Many who follow the space industry will not have noticed this because it is economic development work, not technology development to disrupt a market. This work is ongoing and has a promising future for many audiences globally.

- We are conducting several business operations globally across our business lines to manifest our outcomes along the spirit of the Community in Space™ Campaign.

- In addition, Caelus Partners has commenced putting together the framework for what the Community in Space™ principles are, and how they can be brought to fruition through policy, investments, and other activities. This framework will not be released until we have validated it in simulations and through other sources. As we explained in our campaign document, this framework is intended to be a tool for facilitating dialogue and activities associated with the Space Domain, not a decree on what the community is or what it should be.

How to Participate and Support as we Move Into our Next Phase

So that brings us to where we need assistance and believe anyone can participate:

- If you are a government-related entity of any type, a Space Agency or Defense Department or one of its many corporate subcontractors, we ask that you open the door for us to work with you to address any of the issues mentioned above as they pertain to your organization's interests.

- For businesses and other stakeholders outside of government entities, Caelus Partners welcomes the opportunity to work alongside and support others who have a similar vision or intent by the actions they do in the industry. This can be along our business lines of consulting, financing or investment aspects of the commercialization of the space domain.

- The Caelus Foundation is available for all to further the research, discussion and enlightenment as associated with the commercialization of the Space Domain as it relates to Earth. We can connect you to our Executive Director to see how we can continue the dialogue.

- We ask that if you are operating focused in the Space as an academic, business or government anywhere on Earth, that you connect and dialogue with those that are not involved to help educate on the strategic situation as you may see it.

We would like to acknowledge the many organizations that have already been tremendously helpful, and who we look forward to further engaging in dialogue about the future of the Space Domain. There are many people and organizations doing important work and making a difference. We have been blessed to work with many of these such as the Secure World Foundation, Space Foundation, Space Generation Advisory Council, and others who have helped our understanding and ability to communicate with different groups around the world. We are indebted to many others that we are not mentioning because they prefer discretion.

Along the way, we have also encountered people and organizations who have ulterior motives, seeking to take advantage of other organizations or governments financially. We have been on the receiving end of corrupt and unethical practices and have seen others attempt to discredit or copy our work. We are

indebted to them as well, as they helped us to teach others what to watch out for and have strengthened our resolve to improve the environment for space-related investment and economic development. We welcome your assistance in making those improvements for the benefit of all.

What the Future Looks Like

The objectives for the campaign and our actions remain unchanged:

- The cost of space exploration (in resources and time) will be lower and utilization will be greater;
- Economic growth occurs with greater participation and opportunities;
- It is safe and structured to participate and operate in the Space Market/Domain and do business regardless of where you reside on Earth;
- Ultimately, the Space Market/Domain becomes a sustainable and self-sustaining economic environment as it continues to expand beyond the geosynchronous orbit.

In summary, the Space Domain has incredible potential for commercialization, but it is challenged by some of the practices and behaviors that have built up over years of being a government-dominated arena. Thus, space as a market today is most similar to defense market — the business of *war* — *the identification and the destruction through imagery, sound, and direct and indirect methods of human will*. As members of our company have served in combat, we can share with you that this is not the healthiest way to start a community in the Space Domain. We are not naive, and we know that destruction and conflict have already taken place in the Space Domain, and this is to be expected in the future due to human nature. However, there are different ways to approach this economically to minimize such behavior and to create a prosperous future for more than just the winners of a battle. *Caelus Partners unconditionally believes that it can address this with the right entities collaborating and investing efforts globally*. Economic development is the key — true international commercial exchange and competition of technology, services, and goods, with nation-states providing the necessary stability to enable commercial transactions. Let us join our efforts with yours to enable the best outcome for as many on Earth as possible.

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