

A satellite with solar panels is positioned in the upper right corner of the cover, set against a dark blue space background filled with stars. A bright blue beam of light emanates from the satellite, extending downwards and to the left. The background also features a glowing blue horizon line, likely representing Earth's atmosphere.

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Creative teaming arrangements to jump-start early-stage companies: How to create a win-win in NewSpace

A guide for lawyers and clients

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Overview

Much of the buzz about NewSpace focuses on exciting space-related startups led by entrepreneurs with new ideas, young work forces, and Silicon Valley positive attitudes. This is all true, but legal practitioners in this area also see many of these new companies struggling with the hard realities of raising money with early-stage business plans, difficulties in establishing brands or other distinguishing features, meeting the market requirements for robustness of the technology necessitating more time and money than expected, and other issues experienced by many startup tech companies.

Many of the new business plans are also quite ambitious, going directly from drawing board to operating constellation. Although these systems are smaller and less costly than the constellations introduced in the commercial space industry in the 1990s, many of the same hurdles still exist. Satellites still need to be manufactured. Though the costs are much lower and some NewSpace companies are essentially manufacturing in-house, for many of them there is a fair amount of development work to be done between pilot and actual constellation before there is a marketable product. The costs of that development and the time to

market needs to be bridged in some fashion. Launch costs are much lower for than for large geostationary satellites, but are still far from insignificant and lack of availability of appropriate launch vehicles is currently a real issue. There are also significant regulatory hurdles for NewSpace companies, as spectrum is not easily obtained, the application process is often long and difficult, the regulatory regime applied to NewSpace applications is not always clear, and competition can be fierce.

The historical experience with constellations has been challenging. A few notable non-geostationary satellite systems (NGSOs) were architected in the 1990s, with the most ambitious one (Teledesic, at 840 active satellites) halted following financial challenges. Iridium (1999) and Globalstar (2002) initially filed for bankruptcy. And some more recent constellations have struggled in various ways, either on the technology side or with a mismatch between system capabilities and actual customer demand. It appears that even with NewSpace, developing, building, and financing satellite systems is still not an easy task, and the barriers to entry are formidable.

What's new in NewSpace

Despite the hurdles, it's not all doom and gloom for new constellations, new approaches, and new companies in NewSpace. The Globalstar and Iridium second constellations are online or coming online. Orbcomm's next generation constellation has been operating for years. O3B's next generation constellation, designed to provide global high-speed Internet services to the "other 3 billion" unserved and underserved broadband users, has continued to expand, with SES acquiring full ownership in the company in 2016. OneWeb (in some ways the most ambitious program to date) is progressing in its system financing and development with the recent US\$1bn+ investment by Softbank, joining the ranks of Qualcomm, Grupo Salinas, Airbus, Bharti, Coca-Cola, Hughes, Intelsat, MDA, and Virgin Galactic as investors.

There are some things that are genuinely new about NewSpace that seem quite promising:

- The industry and customers are embracing a broader range of data products (both in place and aspirational) through more sophisticated remote sensing or other means of gathering data from space, which combines with very rapid progress in big data analytics to produce products for which there is clearly strong demand.
- Using new technologies such as high throughput satellites (HTS) and constellations, satellites are once again being positioned as an alternative to terrestrial products, such as broadband internet.
- The industry is developing satellites that are significantly smaller with near-assembly line aspirations.
- New companies are developing small and reusable launch vehicles to meet the demands of launching smaller satellites, at commensurate price points.
- There is an influx of dozens of new companies with new technologies, many led by new entrepreneurs with ambitious growth plans. They are revising views of the sector, despite the fact that many of these companies lack funding or other resources.
- New business models are being introduced that are more attractive to investors without long histories in the industry by providing lower capital expenditures and earlier revenue streams.
- The public's imagination is being fired up by new space technologies such as deep space/asteroid mining, in-orbit refueling, 3D printing in space, a commercially supported trip to the moon, and even possible voyages to Mars all somewhere on the horizon.
- Creative teaming arrangements are being formed between startup companies, established providers, operators, and manufacturers to provide financing, support earlier market entry, provide mutual access to new technologies among established providers and new technology companies, and focus directly on innovation.

These creative teaming arrangements are paralleled by entrepreneurial initiatives from traditional manufacturers developing NewSpace products, such as Orbital ATK's new satellite life extension business Space Logistics, Lockheed Martin's GEOshare and its new approach to customized payloads on shared satellites delivered on orbit, and Airbus's quantum or software-defined satellites. These come in addition to leaps forward for geostationary satellites, such as electrical propulsion systems. Traditional manufacturers are also investing in NewSpace companies themselves as well as new technologies. These investments are being made not just by direct transactions but through relatively new venture and innovations companies, lending much needed support through Silicon Valley-approved approaches consistent with the new entrepreneurship. Not to be overlooked is a new or improved appetite from traditional manufacturers and other major players for new technologies, which as a significant by-product provides NewSpace startups with the very important potential for a profitable exit if their technologies can be developed and proven.



Creative teaming arrangements as an accelerant to growth for all parties

The creative win-win teaming arrangements arising from combinations of new and traditional companies present some of the most interesting transactions we have seen to date for NewSpace entrants and traditional space alike, and perhaps are as important in driving NewSpace forward as any of the developments listed herein.

Each of these creative teaming arrangements have tremendous benefits for both cost savings and leveraging the technological strengths each player brings to the table.

For the traditional space participant teaming with a NewSpace entrant, it provides a path to enter as a participant that otherwise may not have been feasible to achieve within existing corporate structures. Large companies have to be careful about competing with customers, endorsing certain technologies that may not be successful, developing in-house technologies that are viewed as rival to other technologies also being developed in-house, or taking actions in the marketplace that might threaten other large companies. Partnering with a NewSpace company doing the technology development

enables the large company to go into areas it could not go into itself, since the small company will not produce the same market reaction that the large one would. It also provides a cross-cultural exposure for the traditional space company to the type of disruptive innovation and leadership that can transform an organization.

For the NewSpace participant teaming with traditional space players, it can provide access to capital and legacy platforms of a magnitude that typical seed or Series A capital cannot produce. It can also provide almost instant legitimization of an idea and business model. That in turn can bring in sizeable customers and investors that otherwise would have been beyond reach. Through relationships with primarily financial investors, the strategic player can also provide resources that the NewSpace company needs but cannot readily acquire.

For the multiple NewSpace participants who team together, it provides a win-win of support and validation at cost-effective levels, allowing each to leverage their respective learning, platforms, and costs to make their business models more achievable.



Defining and meeting challenges: Teaming arrangements among unequal partners

These teaming arrangements can pose real challenges, arising from the difficulties of the project but more commonly coming from variances between parties, their resources, goals, and risk tolerances. A good part of the lawyer's value-add in these situations is to identify these variances and the strain they can put on the arrangements, and to provide creative solutions based on experience with approaches that have been successful.

The following highlights some of the key challenges to be considered when drafting teaming arrangements, and some of our techniques in planning for and managing the challenges that arise.

Differences in approach and expectations

When planning or negotiating a marriage between a NewSpace startup and a traditional space company, the lawyer needs to be sensitive to the markedly different expectations of the parties. The lawyer needs to prepare the parties (both the client and, if necessary, the teaming partner) on how to handle some pretty fundamental differences in approach, both to get the deal done and to be able to work together afterwards. Many startups are ready to deal with venture capital investors. They may have done funding rounds before, and there are many guides in the Silicon Valley culture as to how venture

capital investors behave. Once a deal is struck these investors typically want to move quickly, and they are used to dealing with startups. As such, their interests are generally well understood. This is not the case with strategic traditional space companies.

What the NewSpace player expects in a deal

After the terms are agreed upon, the NewSpace company expects a short agreement and a quick closing. The legal agreement should follow a pre-established, early-stage company, Silicon Valley deal template (such as NVCA forms). The company's focus is short term: how the proceeds will be applied and what milestones need to be met before the next funding round, which is at most only 12-18 months away. The NewSpace startup is willing to accept an early-stage company discount on valuation, in return for the investor accepting the early-stage nature of the company and attendant risks. They try hard to minimize process and procedure, and the idea of how the investment would appear in a financial or tax audit is very far from their consciousness. The company's emphasis is all about meeting its own milestones, whether technology or customer-related, to support the next funding event.

What the traditional space player expects in a deal

The traditional space player expects a much more detailed roadmap, and has many more next steps in its plan for the initial transaction, whether a joint venture or an investment plus a commercial deal. The investment in the NewSpace company is often the result of a buy rather than make decision. So while an investment report is generated and sent to management, the team handling the deal is totally focused on when the technology will meet the traditional space player's strategic objectives, and they want more information about the various stages of development than are traditionally offered to investors. The commercial deal is often the key element for the traditional space player, and it does not follow any established form or pattern, takes time to negotiate, and calls for a fair amount of effort to support the commitments sought by the traditional space company. There is also big company accountability, with a focus on extensive diligence to make sure the NewSpace company is totally clean, often including a request for audited financials, a desire to have procedures in place to ensure legal compliance and lack of fraud, and processes of various kinds. Traditional space companies also look for greater robustness in the technology than the NewSpace company is planning, which often results in a gap opening up in time to market and development costs.

The role of the lawyer

Of course, most of the differences in the parties' approaches are not legal in nature. However, perhaps the biggest value-add the lawyer can bring to the deal is to manage the expectations of the parties. The parties have to be repeatedly advised on what to expect the other side to do to ensure more progress and less friction. The NewSpace company team needs to be told the deal will take longer than they anticipate. The traditional space company team needs to be told to consider accepting something less than their usual extensive due diligence and validation. A compromise agreement needs to be used, longer than the one the NewSpace company wants but shorter than the traditional space company's form. And compromises need to be sought at every turn, not on substantive deal issues but on process, level of detail, conditions, and matters not meeting expectation.

Financial solvency and performance risk

Partnering with startup or nascent companies brings payment, solvency, and performance risks. The creative upside possibilities are tremendous with new,

breakthrough technologies, but so are the performance risks. This is always one of the first issues to consider in any partnership, particularly with startup companies. Even the most creative and innovative of startups may run out of money, get stretched beyond their capabilities and have to slow down the project, or run into unanticipated costs and delays that are not backstopped in some fashion. Partnering with such innovators requires investors to anticipate the potential of being asked to provide additional payments (beyond what was negotiated in order to keep the company afloat) and/or being in a performance default or insolvency situation that reasonable additional payments cannot remedy.

The greatest fear of established strategic companies investing in startups is not the risk that the financial investment is lost; that risk is analyzed and understood. The greatest fear is continual shortfalls by the startup which then keeps coming back to the strategic investor for more money, time, and support, putting constant pressure on the deal team to justify their decision to partner with a small and under-resourced company. Of course the larger company can stop funding, but then (unless the deal has been structured to prevent this) the small company goes under and the technology solution is lost. The lack of a financial backstop can therefore be quite a difficult issue for strategic investors; even though the risk would appear obvious, the lack of any good solution to this problem is often extremely frustrating.

Legal tools to support the interests of the traditional space company

A number of tools should be considered by the lawyer to manage the risk of the small company being unable to continue to develop or supply its technology or technology-based service. For example:

- The strategic investor may seek a number of special remedies for default, including rights to complete the project (at its own expense) and then self-supply what it needs from its investment. This results in requests for:
 - Intellectual property license rights, including broad development rights
 - Access to source code after default through intellectual property escrow arrangements (where the escrowed software is updated routinely during the development process – a key ongoing diligence requirement)

- Rights to assume major subcontracts (and requirements for major subcontractors to agree to the assignment up-front) and license rights
- Express rights (or elimination of impediments) to hire employees of the company developing the technology, and have access to consultants
- The strategic investor will want much greater visibility into technology developments than normal financial investors would require
- The strategic investor may request rights to cure funding issues and to receive additional consideration for such funding, e.g., equity rights in the counterparty; intellectual property rights; resale/licensing rights; third party royalty rights; revenue share rights and cost recovery to other third party sales

Which protections will be best for a particular situation will depend on the nature of the project and the parties, the ready transferability of the technology and know-how, the performance ratio between the company and subcontractors, and the value of the intellectual property, among other factors. The lawyer needs to remain aware that the biggest risk is often not the loss of the financial investment, but the loss of access to technology. The degree to which the new technology is critical to a larger important expansion, pivot strategy, or technology ecosystem, the more safeguards need to be put into place to ensure the technology can be accessed, deployed, and enhanced for the breadth of purposes originally envisioned.

Risk of becoming subservient

Partnering with large companies brings for small companies the risk of being overwhelmed by the large company, so that the small company ends up orbiting the large company, responding only to its needs and unable to pursue its own business plan. The validation of the large company and support it can provide can be an enormous boost for the small company, but the risk of being redirected, delayed, and/or restricted by the large company is always there. The greater the dependency on the large company, the greater these risks. Even if the large company is not being particularly aggressive or demanding, the scope of the large company's potential needs (and corporate processes) is often well out of proportion to the resources the small company has to spare to try to meet those needs.

Legal tools to support the interests of the NewSpace company

There are tools to be considered by the lawyer to manage the risk of the larger company being over-reaching, and not allowing the small company to have enough room to grow. For example:

- The role of the strategic investor should be limited as much as possible to a normal customer role so long as the NewSpace startup is not in material default. If the strategic investor wants active involvement in the technology development, it should make a direct investment in that technology by seconding people, licensing intellectual property, and providing other resources useful to the small company. Large companies often forget how simple it can be to provide some much-needed support to the small company, and how difficult it is for the small company to provide constant updates and assurances of performance that large companies often seek.
- Small companies have to be permitted to make a decent profit, including on sales to the large company. The large company may realize that it has life-or-death power over the small company, and then uses its leverage to drive a hard financial bargain. This can backfire and result in the small company being squeezed financially, slowing down external investment and ultimately production of the product, undercutting the main reason the large company created the relationship in the first place.

The biggest risk is often not the loss of the financial investment, but the loss of access to technology.

- The NewSpace company may well need more than one strategic partner to provide funding and purchase products. The large company may want an exclusive arrangement that excludes all of its potential competitors, but the price of that exclusivity should be an obligation to provide the funds (including through substantial commercial purchase and/or development cost commitments) the small company needs. If the traditional space company is not willing to provide this funding commitment, its efforts to exclude others who might provide critical funding and customer contracts need to be resisted. Even a significant one-time payment for exclusivity may be insufficient, if it leaves a potential funding gap that cannot be closed due to the exclusivity.

How to achieve balance and win-win structures

Care should always be taken to consider the scope of all teaming arrangements in comparison to the goals of each party and how to achieve those goals in balance with the needs of the partner company. Parties often view provisions in isolation, with specific requests being traded for other requests, and fairness being evaluated based on general considerations rather than benchmarking against the parties' goals and taking into account the differences in the parties' positions. It is not always easy to use a relative fairness approach, but it may be necessary in a situation where the parties are so different. Any proposed teaming arrangement should be tested with business cases to ensure that the provisions will not result in any unanticipated (and avoidable) limitations and consequences.

Application to exclusive or preferred arrangements

In strategic deals where the investment of capital is paired with strategic commercial arrangements, the partner may seek preferred or exclusive vendor and/or purchaser rights, or the company may offer exclusivity in return for extra investment or higher pricing. Although any type of contractual provision can have far-reaching consequences, exclusivity provisions and most favored nation (MFN) or other preferred provider/customer provisions seem to carry more risk for creating future problems than most other types of commercial contracts provisions. The nature of the arrangement ultimately is to provide an environment where the NewSpace company can grow and perform, and the traditional

space company can enjoy the benefits of something being produced externally which could not be done internally. Although there is a place for any kind of provision, more often than not preferred and exclusive arrangements turn out to be suboptimal for the parties. Perhaps these arrangements do not work well in practice because they require a fair amount of prediction about the future paths that the parties will follow. Also relevant is the fact that these provisions are almost always drafted extremely broadly and inevitably end up covering situations that at least one party did not intend to be covered. If these provisions are going to be included, it is critical to consider the gives and gets of these arrangements, and to try to consider creatively if any win-win compromises can be reached. The lawyer should try to ensure that MFN or exclusivity provisions are limited wherever possible, not only as to scope, but also as to timeframe, and that they be earned on a continuous basis, dropping away if the commitments by the recipient party no longer justify inclusion.

For example, an MFN or exclusivity could be tied to ongoing purchase commitments, performance and staffing commitments, other performance criteria or future investments, so that when the parties are not so closely tied these clauses will cease to apply. An exclusivity provision can limit not only access to other revenue and funding opportunities, but can also operate to restrict the exit strategy of a NewSpace company and its other investors.

The strategic partner may seek additional provisions at the start of a relationship when it likely has maximum leverage, prior to its investment, including preferred vendor rights to supply certain services to the NewSpace company, that may enhance the dependency of the NewSpace company on the strategic partner. These provisions must be carefully considered to avoid restrictions on the NewSpace company's flexibility and sales potential (both as an operating business and on exit). Depending on how important the strategic partner's investment, it may be impossible to avoid these provisions entirely, but with careful thought to reasonable limitations (as in the case of exclusivity) to likely business paths and goals, they can be placed within a much more acceptable risk-reward balance.

Application to direct priorities

The strategic investor may also want to direct the priorities of the NewSpace company, whether in terms of product development or other system roll-out objectives, based on its own business priorities. Often the commercial arrangement is the key driver of the strategic investor's decision to support and invest the NewSpace company. Care should be taken in building in flexibility for the NewSpace company to consider priorities of other customers and market opportunities in addition to those of the strategic investor. Typically, this will require a careful consideration by both parties of the likely scenarios that may arise, a process for balancing priorities of both companies, and some give and take (with possibly the right by the strategic to fund additional resources) to meet the objectives of both companies.

Restrictions on flexibility of the parties

Both the NewSpace company and the traditional space company often have distinct restrictions on their flexibility which are difficult for the other party to understand and accept. These limitations pop up in many transactions, producing frustration for the party who did not anticipate them.

One such limitation relates to the amount of financing to be contributed. To the small NewSpace company, there should not be any real difference for the large company to contribute an extra couple of million dollars. Accordingly, the small company tries to increase the amount of investment after the parties are well into the transaction process, and often the large company's response is a flat rejection, no matter how much the small company pushes. The small company makes the classic mistake of seeing the issue only through its own eyes, and it sees the investor with large amounts of cash on its balance sheet being extremely inflexible.

The rationale for the rejection often is something the

small company may not understand, a process limitation rather than a financial one. The large company has in place procedures to govern its investments and maintain order, which require business cases to be submitted and approvals to be obtained. A decision to invest in a NewSpace company is not a casual spending of some spare cash that is otherwise unused, but a strategic decision reached by the large company after much internal consideration and weighing of factors. Once the decision is reached, after weeks of consideration and process, it is difficult to alter that decision, for reasons unrelated to the specific transaction. It could have been reasonably easy to obtain a higher investment if the request was made at the beginning, but later in the deal it becomes problematic.

Another common limitation relates to restrictions on the conduct of the large company, perhaps a non-competition provision or one relating to pricing for the resale by the large company of the NewSpace company's products. These types of requests are usually non-starters, raising antitrust risks which carry way more exposure for the large company than its entire investment in the NewSpace company. Also, for a large company these types of clauses, purporting to restrict the plans and conduct of thousands of people not on the team for the NewSpace company deal, simply cannot be complied with. The NewSpace company may try to make a case as to why the provisions are fair or appropriate, but these discussions never end well since the large company really has no flexibility to accommodate this.

Both the NewSpace and traditional space company often have distinct restrictions on their flexibility.



A few additional thoughts on teaming arrangements among equal NewSpace partners

In addition to teaming arrangements among unequal partners, we are also seeing creative teaming arrangements in NewSpace among two NewSpace companies. Of course, larger and more established enterprises also enter into joint ventures, and every joint venture involves enterprises which bring different capabilities and goals to the table; whether it be different technologies, or new and different market access opportunities. Many of these are also as creative, but for purposes of this article the focus is on the small NewSpace entities.

Notable in NewSpace, we are seeing more and more teaming arrangements between two smaller companies which are using different ways of merging or intersecting their business plans in addition to the more standard sharing of platforms, technologies, or using partnerships. Some teaming arrangements can involve one company assisting another to enter into its business before the assisting company launches its own platform. In other cases, the two NewSpace companies are developing products that can be used together, such as SmallSat subsystems or data analytics for a planned SmallSat satellite operator. Some teaming arrangements are between companies that may be potential competitors for

market share, agreeing to cooperate today even though they may be at war the future.

Many of the issues discussed above for unequal arrangements need to be considered with respect to teaming arrangements among equal NewSpace companies, with the notable difference that both companies may be facing more financial, business plan, and technology uncertainty with each other than they would with a large established partner. With a teaming of equal NewSpace participants neither partner will likely be able to financially protect against business plan risks and failures of the other partner in the same way that a larger established company can. So while there are fewer cultural and style differences between two small companies teaming together, the arrangements come with the additional risk of tying a small company's future to not only its own issues as a startup, but also with those facing another startup. Care must be taken to consider and draft in protections for both companies to minimize double the startup risks in the pairing of two NewSpace companies.



Basic contracting: who takes the risk and who is responsible

The unique aspects of teaming arrangements between NewSpace companies and traditional space companies should not distract the parties and their lawyers from the need to address basic contracting principles. As in any contractual situation, the lawyer has to raise questions about risks and how to bear them. The following discussion focuses on handling some of these issues in the context of space programs.

Defining the responsibilities of each party

The teaming arrangements should set forth as precisely as possible the responsibilities of each party and the assumptions as to dependencies (deliverables, information/decision requirements, performance, schedule, scope) and liability for any failure to perform by one or the other parties. Since there will be many matters involving shared responsibility and interdependent rights and obligations, it remains critical to set forth a framework of possibilities. This framework will also guide (at least in part) the allocation of program risks.

Allocating the risks

In any space program, a broad array of risks, costs, and schedule delays may be faced:

- Program delays, whether caused by third parties, force majeure, or the parties to the venture
- Cost overruns
- Third party claims, both insurable and uninsurable
- Changes to addressable market, requiring business changes (decisions by government agencies, new commercial opportunities, changes to competitive landscape)
- Changes in technology, which may require adjustments (e.g., obsolescence) or may be advisable (e.g., improvements, upgrades, and enhancements) and in turn result in cost or schedule impacts
- Changes in internal corporate structure and/or priorities for either partner
- Changes in law, such as to regulatory requirements, permissions, fees, delays or prohibitions, including spectrum, orbital slot, export, and other licensing and regulatory requirements
- Unanticipated third party fees, claims, and rights that may need to be negotiated or litigated
- Launch failures

Provisions as to who bears these risks and funding requirements must be considered, including whether any of the risks can and should be covered by insurance and at whose cost. The parties' contractual arrangements should consider the contributions of each party, and the consequences of either party not performing (such as an increase in cost or delays in the schedule). The consequences of non-performance may be compensation for direct or identified costs in case of a delay, liquidated damages, right to seek alternative vendors, termination, equity reallocation, or almost any other remedy that may be envisioned in a commercial arrangement. The consequences to either party to the venture may be reciprocal, or there may be different remedies for each party given the differing nature, financial position, and commercial gives and takes of each party.

Planning for decision making roadblocks

In almost any venture, and even more so in collaborative ventures, the parties will have a decision making process as part of the venture. Among the hardest issues to address, due to the need to predict the future, are issues about the decision making process. Nevertheless, the more issues that can be anticipated and dealt with up-front, the less likely the decision-making process is to be contentious. Given the unequal positions in teaming arrangements between parties of significantly different size, a process needs to be put into place that will withstand differences between the parties and their disparate goals and needs. In longer-term ventures, and ventures for the development of new products, where commitments need to be put in place up-front but key matters are not yet known such as cost and pricing, creative mechanisms need to be used. Where the parties fund a combined operation, they need to consider how decisions are to be made on business plan changes, funding increased costs, undertaking changes which may have schedule or cost impacts, decisions relating to rights to provide commercial purchases of services or equipment (or to outsource certain functions to one or other of the partners, and at what cost), and other major matters. The parties also need to consider exit strategies (and rights and obligations of each), funding obligations, valuation, transfer of ownership interests, and other areas where the decision making process may create roadblocks to success.

Termination provisions and survival of terms

One of the most critical series of questions to be addressed by the lawyer relates to how and under what

circumstances various aspects of the joint venture arrangement terminate. There are many ways of addressing these questions, and they may cover such areas as what happens to existing facilities, transition to new facilities, and costs to transition; rights to continue on arm's length market terms rather than the preferred terms of the joint venture; the time frame needed to separate after a notice of termination; and whether termination rights are reciprocal or should be different based on varying contributions, actions, or reliance. As an example, if one party provides funding and is also a supplier to the venture, should the rights to continue as a vendor survive sale of the equity position? If so, how does that survival impact the ability of the remaining party to maximize revenues (e.g., does it preclude favorable contracts with other vendors, which may include financing and/or service purchase agreements)?

In certain instances, termination may not be feasible, such as in the case of a hosted payload arrangement. In other instances, termination may require a buy-out.

Often, intellectual property rights may be involved, and the respective ownership rights, right to use, and sublicense (including to the other parties' competitors) may be critical. For example, in the case where a system platform is architected around specific intellectual property (whether owned by the other party or jointly developed), each party must exit the relationship with ongoing rights to use the intellectual property. The nature of the respective rights may become the subject of complex discussions such as ownership versus license (including exclusivity), background versus foreground technology, enforcement rights, royalty payments, improvement patent rights and system enhancements, time limitations (if any) to such rights, and geographic and system scope limitations (if any) to such usage.

Regardless of the diverse nature of the scenarios that come into play, all scenarios have one thing in common: the parties will be well served if the lawyer thoroughly considers and negotiate up-front as many termination scenarios as possible. Termination also includes provisions as to survivability. For example, if a teaming arrangement is terminated, provisions as to intellectual property rights, non-competition, and obligations to complete ongoing projects need to be carefully considered up-front in drafting agreements.



Navigating regulatory and export control challenges

The top four regulatory licensing tips for SmallSat startups

In the process of building a business case and raising money for innovative SmallSat systems, regulatory licensing concerns often take a backseat, creating complications and unnecessary time-sensitive hurdles down the road. Although regulatory issues can be complex and fact specific, there are certain general steps you can take to increase the odds that you stay out of trouble.

Research your spectrum bands

Spectrum is a scarce resource, and frequency bands can be incredibly congested. Other operators in the band (satellite or terrestrial) and your ability to work with them to avoid harmful interference are important.

- Know who is in your band and conduct some technical analyses to determine whether sharing is feasible.
- Choose a frequency band that fits with your particular service (e.g., earth-exploration satellite service or meteorological-satellite service). While regulators may be flexible with respect to temporary use or experimental licenses, long-term use of a band almost always requires an appropriate international and regional service allocation.

Learn the rules

Satellite communications are heavily regulated. In most cases, you will need licenses for sending and receiving radio frequency transmissions for both the satellite system and also the associated ground stations. For example, in the United States, these licenses will be issued by the Federal Communications Commission (see 47 C.F.R. Part 25). In some cases, there may be applicable International Telecommunication Union (ITU) regulations. If you intend to provide Earth imaging services in the United States, you will need another license from the National Oceanic and Atmospheric Administration (see 15 C.F.R. Part 960). While becoming an expert in these rules won't happen overnight, you should spend some time to learn the basics. Reading the rules and reviewing sample applications from other SmallSat operators is a good start. Doing so will help keep legal costs down and enhance the quality of any application or other filing you prepare.

Communicate

- Talk to your regulators. Regulators actually do want to help and are interested in learning about what is happening in the industry. Introduce yourself and let them know your plans. However, when you do meet be respectful of their time: do your homework, come in prepared, and you will be taken more seriously.

- Talk to other spectrum users in your frequency bands. In many cases, sharing spectrum will be critical to your long-term success.
- Talk to other SmallSat operators. Their experiences and lessons learned can be invaluable.
- Consider joining industry organizations, like the Commercial SmallSat Spectrum Management Association (CSSMA) or the Satellite Industry Association (SIA), that can help keep an eye out on regulatory satellite issues.

Be aware of regulatory issues and start planning early

Regulatory issues can snowball if you don't take them into consideration at the start. Simply being aware of potential issues (such as spectrum use, coordination, licensing fees, and upcoming regulatory proceedings) can help you plan better and avoid mistakes down the road. Remember that government agencies take time to make decisions. Hours and days may be the norm for making decisions for commercial entities, but government agencies can take months and even years.

Export control matters in teaming arrangements

Despite the recent easing of U.S. export control restrictions as part of the Export Control Reform initiative, commercial satellites, ground control systems, and launch services remain highly controlled under U.S. export control laws and regulations.

These restrictions can have a significant impact on the flow of goods, services, and technical information in satellite-related transactions, including the nature of the technologies to be deployed as well as the counterparty

with whom you are venturing. Provisions as to joint development, sharing of development efforts, and personnel entitled to participate in developments may be restricted, delayed, and/or prohibited by applicable export control regulations, including licensing requirements under both the International Traffic and Arms Regulations (ITAR) relating to defense-related articles and services (including launch vehicles and launch services) and the Export Administration Regulations (EAR) of the Commerce Department, as well as the laws of applicable non-U.S. jurisdictions.

Established companies generally consider their joint venture partner's sophistication with regard to export compliance, as significant adverse consequences can result from compliance failures. But the lawyer can help in bridging gaps in expectation, since larger government contractors may take a more conservative approach than may be required and/or preferred by a startup venture. As long as the startup can demonstrate that it is taking the issues seriously and devoting adequate resources, the larger company may have sufficient comfort to accept the startup's view.

In this regard, the larger party could offer to take primary responsibility for obtaining export licensing requirements (leveraging its greater compliance resources, knowledge of the applicable requirements, and experience with licensing procedures), in exchange for benefits or concessions in other areas of the agreement. In any case, all parties to the transactions will need to take care to evaluate how participation by others may affect the application of export restrictions, the speed to market, and the ability to transact certain business.

Summary of best practices and takeaways

Joint ventures and teaming arrangements can bring tremendous value, and win-win situations, to all participants. They can provide resources, funding, access to new and/or established technology, jump-start market credibility, and provide access to mature sales channels and seasoned customer relationships. At the same time, they need to be carefully considered up-front, with a detailed consideration of the various scenarios which may arise over time.

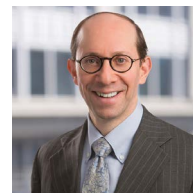
- Consider the benefits to you of the arrangement with a particular counterparty, and the risks of the arrangement with that (or any) counterparty, and opportunities which the arrangement may foreclose. Many of the risks (or downsides) can be ameliorated or eliminated by thoughtful drafting and creative approaches up-front in forming the partnering relationship.
- Consider many different potential and foreseeable eventualities which could arise during the business relationship, what outcomes you would envision, and how you would want and need to protect yourself. By anticipating what can occur, and addressing this in your agreements to protect your interests, you can maximize your benefits and avoid many adverse (or unexpected) outcomes. Of course, there will be some loss of flexibility inherent in the arrangement, but

the benefits should far outweigh the disadvantages for the arrangement to make sense.

- Consider the benefits and risks with a multidisciplinary team, including possible business, technical, government, and regulatory outcomes during the life of the program. Many of the issues are multi-faceted, and would benefit from the perspectives of different team members.
- Know your partner. As a practical matter, many of the risks that may occur will vary widely in significance depending upon the partner.
- Maintain the core business rights and flexibility you need in the structure and documentation. All satellite programs are dynamic, requiring both structure and flexibility.
- Consider how numerous matters to your relationship will be unique and reflected in the documents and drafting. The lack of standard models of documentation and unusual risks will often put a premium both on thoughtful planning and creativity.

For more information, please visit:
<http://www.hoganlovells.com/en/service/space-and-satellite>

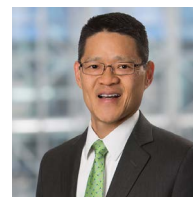
Key contacts



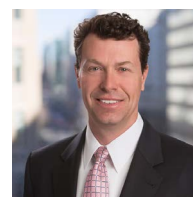
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