Chapter 2
The First Division—Security Wing

SSP

The first feature of the first division of course is the inflatable solar power satellite. Once the 1 km in diameter demo satellite was successful the company could proceed with larger assets. In this regard, in just one launch with a Delta IV the first division could loft a satellite 5 km in diameter into a geosynchronous Earth orbit (GEO). No assembly would be required for a satellite that would then generate over 5 GW on orbit. This energy could then be transmitted to the Earth via microwaves in the aforementioned way, supplying as much or more energy than most nuclear power plants (Brown 2012). With just a few dozen launches with a rocket that is already in existence, the first division could immediately begin to alleviate much of the energy needs of a region of the United States in a very environmentally friendly fashion (Brown 2011).

However, to supply the energy needs of the whole of the country, a much larger satellite would be necessary. In this regard, a satellite 300 km in diameter could generate more than 18 TW on orbit. As this satellite would require some assembly perhaps it would be best to locate it closer to the Earth in a medium Earth orbit (MEO). If there were three such spheres rotating in MEO, then there would be enough energy to not only meet the needs of the whole of the United States, but also even those of the entire world (Brown 2010). Such satellites would appear majestic in the sky and would constitute nothing less than "Solar Moons" (Brown 2012).

The concept of inflating an artificial moonlet in Earth's orbit is definitely viable. In fact, during the Vietnam war NASA proposed to the Department of Defense "that it place an artificial moonlet in synchronous orbit over areas such as Vietnam to aid military operations at night" (Schauer 1976, p. 67). The idea was that the artificial moonlet would reflect light onto the theater of operations. While such an asset was rightfully recognized to be of dubious value by the Pentagon during

T. Brown, *The Digital Galactic Complex*, SpringerBriefs in Political Science 30,
DOI 10.1007/978-3-319-22386-5_2

Vietnam, today assets that could supply the energy needs of the whole of the globe with the cleanest energy available would be the most critical assets in the nation's inventory. In any case, if NASA could have created an artificial moonlet decades ago, surely Silicon Valley, NASA, and the American scientific community could create one today. Indeed, the establishment of three 300 km in diameter artificial moons inflated on orbit would involve the assembly of only a few hundred very large photovoltaic pieces for all three structures together. This would obviously be a dramatic reduction from the tens of thousands of pieces required for the assembly of just one of the solar power satellites that NASA and the NRL have been attempting. Clearly, even massive inflatable structures such as the Solar Moons would be a far easier proposition than NASA's and the United States military's previous designs. What is more, while NASA's and the NRL's previous designs would only be generating a few gigawatts at most the Solar Moons would be generating over 50 TW on orbit collectively—enough to supply the energy needs of the whole of the globe.

But furthermore, a constellation of three massive spheres would likely be easier to manage than hundreds, or thousands, of relatively smaller ones. However, for a variety of technical and security reasons it may be more prudent to have the energy supply distributed. Thus, hundreds or thousands of 5 km satellites ringing the Earth could be the best strategic posture for these assets in space. But then again, even if there were this many, they would not be able to generate as much energy as three 300 km spheres. Perhaps then, the most prudent strategic posture would be to place three Solar Moons in MEO and then surround the globe with a few hundred 5 km spheres in GEO.

Whatever constellation of the first division would decide on the financial opportunities would be limitless. The operations costs of three 300 km spheres would likely be only tens of billions of dollars on an annual basis. Unless a 5 km sphere were serving as a base of operations for the company in space, the operations cost of it would probably be zero as it would most likely be replaced if there were a significant problem. Thus, the operations costs of the whole of the constellation would still be only tens of billions of dollars.

In any event, the cost to develop these systems would be immense but totally manageable. At present, the production costs for ground-based photovoltaics are around $1 per watt (24/7 Wall Street 2011). But according to the United States Department of Energy in 2013, worldwide output for the entire solar industry was just 45 MW. So with just one 5 km in diameter inflatable solar power satellite the worldwide production of photovoltaics would surge by a factor of over 400. If the Joint Stock Company were to orbit hundreds of 5 km assets, the worldwide production of photovoltaics would surge by a factor of tens of thousands or more. Indeed, if the Joint Stock Company were to orbit three 300 km in diameter artificial moons the worldwide production of photovoltaics would surge by a factor of millions. Over 840,000 square kilometers of extremely thin and lightweight photovoltaics would have to be produced for three 300 km in diameter artificial moons. If the Joint Stock Company were to achieve such scale, the production costs of photovoltaics would drop dramatically. This could mean that the Joint Stock

Company could possibly orbit 5 km in diameter assets for hundreds of millions of dollars each and three 300 km in diameter artificial moons for just hundreds of billions of dollars. Quite possibly the total cost for the whole of the energy infrastructure could come in at under one trillion dollars.

As far as financing the development of these systems is concerned, if 1 GW of energy could supply the needs of 750,000 homes (Garretson 2012), then the 5 km in diameter assets could be generating around a billion dollars in profits each. In fact, even with the most conservative performance estimates for the conversion/path loss/reconversion/distribution factor, the 5 km in diameter assets could still generate hundreds of millions of dollars in profits each. So after an initial round of funding from the United States government amounting to a few billion dollars to start the operation and develop the first few 5 km in diameter satellites, the profits that these would then generate could finance the development of more and more assets. In this way, the Joint Stock Company could grow the number of assets on orbit with mostly organic processes. Therefore, after orbiting around one hundred 5 km in diameter assets, the company would then have the resources to move out with the development of the 300 km in diameter artificial moons. Or if the political climate in the United States recognized the urgency with which the artificial moons should be developed, perhaps the United States government would undertake to finance their development in all of their entirety by appropriating a few hundred billion dollars for the effort. Such an outlay could easily be managed in installments over a period of a few years and would speed the development of these systems dramatically. Indeed, when considering the fact that the United States government expended over a trillion dollars for the Iraq war, such financial arrangements would look extremely prudent in comparison.

If the United States government did undertake to finance the development of the demo satellite, the first few 5 km in diameter assets, and even the artificial moons, it would mean that the Silicon Valley entrepreneurs and the elements from American industry that created this organization would have incurred virtually no financial risk in the process. However, while the United States government could provide financial support to the organization, Silicon Valley and American industry would certainly not need it. They already have the resources to create the energy constellation with wholly organic means.

Regardless, the global energy and transportation marketplace is roughly $7 trillion (Garretson 2012). This could mean over one trillion dollars in profits in the first year of the Solar Moons' operation alone. Indeed, as the cleanest energy there is, solar is politically attractive. In addition, the cost of the energy would undercut all global energy competition as well. But then energy consumption would quickly leap with the ensuing economic expansion (Brown 2012).

As such, this energy concern could conceivably achieve 50 percent global market share, which would put revenues at around $3.5 trillion. Some estimates have this concern achieving a near monopoly at 75 % global market share, which would put revenues at in excess of $5 trillion. As the entire slate of development costs would be less than a trillion, and as costs to operate the constellation would be in the tens of billions, then these projected cash flows could give this concern a valuation of $50–$100 trillion. If this concern was based in the United States, then it would double the national assets virtually overnight (Brown 2012).

Needless to say, this would make Silicon Valley and the United States aerospace establishment exceedingly wealthy, far wealthier in the case of Silicon Valley. $100 trillion divides a lot of ways. With just 1/1000 of a percent of the equity, a former scientist at NASA would become a billionaire. Obviously, this could make thousands upon thousands of Silicon Valley entrepreneurs and NASA personnel billionaires. According to Forbes, there are around 2,000 billionaires in the world today (Forbes 2014). This one entity could create 10–20 times as many billionaires as there are in the rest of the world combined from out of Silicon Valley, NASA, and the American aerospace industry. Anyone having difficulty believing that these assets could generate this much wealth need only take one hard look at the Gulf Arabs to see the tremendous wealth that energy assets can create. What is more, not only would the artificial moons deliver energy on a much larger scale than the petrochemical operations in the Persian Gulf, but also the profit margins would be higher as well.

In addition to the vast wealth that this aerospace and defense entity would create, there would be a precipitous rise in revenue to the United States treasury. If indeed there were over $5 trillion in profits, the second division could reinvest around $2 trillion back into space. This would leave roughly $3 trillion for the United States government to tax, resulting in direct tax revenues slightly in excess of $1 trillion. The rest of the profits, around $2 trillion, would be left for the fourth division to engage in investment operations. These operations would put the sovereign wealth funds of the Middle East and Asia to shame. However, if the second division were reinvesting $2 trillion into space, then this would result in a flurry of business activity on American soil that would rise significant additional revenues to the United States treasury. In addition, there would be a wave of innovation from the spillover from space that would spark a technological explosion that would cause the domestic economy to surge further. The cumulative effect of all of this could be a massive budget surplus for the United States government—perhaps in the trillions of dollars. This would mean that the United States government would not have to reform Social Security and Medicare when the baby boomers move into retirement in around 2020. Indeed, this would mean that the federal government could even increase the benefits paid out to these retirees. What is more, there would still be plenty of money left over with which to pay down the national debt.

Another important aspect about this infrastructure in space would be the ability of the company to use it as bases on orbit. The energy supply is already there for space-based radar, which would also be a necessity for the protection of the most massive of these assets. But with the energy supply, a whole range of base activities would then be enabled. Whole villages could spring up around the artificial moons.

Clearly, these assets could serve a dual function as ballistic missile defense (BMD) in addition. It would be possible to weaponize part of the energy supply to constitute directed energy weapons (DEW) in space that could shoot down missiles, especially in the boost phase. Indeed, it would likely to be technically easier to inflate a solar-pumped laser on orbit than to proceed with the conventional space-based lasers (SBL) that the pentagon has had on the drawing board since the strategic defense initiative (SDI). At least this would be the case for the small inflatables. Regardless, with hundreds of the smaller spheres, there would necessarily be a considerable amount of redundancy to have an effective missile defense constellation. What is more, as the smaller spheres could be orbited in one launch and would involve no assembly, they could be rapidly replaced in the event of war. Quite obviously with the massive DEW available, the constellation will be poised to protect itself from any number of threats. The inflatable solar power satellite could revolutionize modern warfare with its ability to neutralize intercontinental ballistic missiles (ICBMs). In fact, it is quite possible that the energy constellation could neutralize the entire missile arsenals of all nuclear powers. As such, the inflatable solar power satellite could be the greatest constant tactical factor in the history of constant tactical factors.

A Debris Service

Beyond the energy constellation, the medium of space has huge strategic significance. In the twenty-first century, the medium could develop into the most significant theater of military operations. John F. Kennedy recognized as much in 1960 when he stated “Control of space will be decided in the next decade. If the Soviets control space they can control the Earth, as in the past centuries the nations that controlled the seas dominated the continents” (Johnson 1987, 27).

In this regard, digital nations have centers of gravity that are critical to their functioning (Gray 1999). Space-based assets constitute the center of gravity of digital nations. Assets such as the global positioning system enable the digitization of national economies. The timing signal of the GPS has become ubiquitous for ATM time stamps across digital nations. Not only does the GPS perform this critical function, but also its positioning capacities have become vital for a vast array of other commercial activities as well “ranging from just-in-time logistics, international air and maritime traffic control, and the functioning of cellular telephone networks” (Sheldon 2007). To state Carl von Clausewitz’s (1976) famous dictum, “one must keep the dominant characteristics of both belligerents in mind. Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed” (720).

Hays (2009) has addressed the critical nature of space-based assets as global utilities. According to Hays (2009), the global information grid could not operate effectively without space-based assets. As such, commercial space activities have come to be seen as global utilities. The capabilities these assets provide include “communication, environmental, position, image, location, timing, or other vital technical service or data to global users” (Hays 2009, p. 184). Thus, space-based global utilities have become as important to modern society as water and electricity services (Hays 2009).

Therefore, with so much of global society already dependent on space-based assets (a dependency that will only grow exponentially when the globe's energy supply is constituted on orbit), the Joint Stock Company would naturally constitute a service to remove orbital debris to protect these critical assets. Thus, the second feature of the first division would be a service to remove space debris. Regarding the issue of space debris, the 2007 Chinese direct ascent anti-satellite (ASAT) test created a tremendous amount of orbital debris in low Earth orbit (LEO). In fact, the International Space Station (ISS) has had to adjust its orbit numerous times to avoid hitting the space debris that this act generated. More recently, the American Congress has looked into the issue of space debris.

What they found is that "decades of human space flight—primarily U.S. and Russian space activities—have littered the Earth's orbit with debris. NASA defines orbital debris as 'all man-made objects in orbit about the Earth which no longer serve a useful purpose.' Examples include derelict spacecraft, abandoned space launch vehicle stages, mission-related debris, and fragments created as a result of explosions or collisions" (Hildreth and Arnold 2014, p. 2). For many decades, now the United States has taken the international lead in monitoring all of the trackable objects in Earth orbit. The United States Air Force (USAF) has traditionally operated the debris observing surveillance equipment for the United States. In this regard, "the US Space Surveillance Network was the leading space object tracking system in the world and catalogued objects as small as about 10 cm (softball size) in LEO and as small as 1 m in Geosynchronous Orbit. In the past, the Space Surveillance Network tracked more than 23,000 objects 10 cm in diameter or larger in orbit around the Earth. Of those, only about 1,100 (5 %) were active satellites. The rest was orbital debris. In addition to the debris tracked by the Space Surveillance Network, there were hundreds of thousands of pieces of debris smaller than 10 cm, which were considered too small to track or catalogue, but were still capable of damaging satellites and the International Space Station" (Hildreth and Arnold 2014, p. 2). But while the USAF has done a good job tracking debris with the systems they have had in the past, the first division of the Joint Stock Company will be poised to move out with even more technically sophisticated systems for tracking objects in space. Indeed, the USAF already has a new and more sophisticated space fence under development. "The new Space Fence will track about 200,000 objects and make 1.5 million observations per day, about 10 times the number made by previous radars such as the AFSSS. Air Force leaders have estimated that the actual number of objects orbiting Earth is closer to 500,000. The new system would have a maximum coverage area of 40,000 km, whereas the previous AFSSS covered 22,000 km maximum" (Gruss 2015). Perhaps the company would acquire the same technology when it becomes available in the near term while devoting even more resources to the development of even more advanced space object tracking systems over the long term.

In addition to such tracking technologies, the company will have an incredibly sophisticated space situational awareness (SSA) architecture as well. The company's SSA will certainly make use of the most advanced nanosatellites for the effort. In fact, the energy constellation will be constantly surrounded by co-orbiting satellites. All of the monitoring activities occurring in the artificial moons' orbits will be tremendous to say the least.

Beyond the USAF's efforts to track debris, NASA pays close attention to the problem as well. In 2014 alone, NASA reports that until September at least "seven small suspected and confirmed breakups have occurred in low Earth orbit since late March. The first was Cosmos 1867, a Plazma-A-class spacecraft launched by the former Soviet Union to test a new, advanced nuclear power supply. Cosmos 1867 is a sister to Cosmos 1818, which created a similar debris cloud in July 2008. As with Cosmos 1818, the cause of the breakup is unknown, although six objects identified as 'coolant' were added to the SSN catalog of orbiting objects. It is suspected that the debris are leaked sodium potassium coolant released either through a hypervelocity impact of a small particle or some other breach in a coolant tube through thermal cycling" (NASA 2014, p. 1). NASA believes that these breakups on orbit were due to hypervelocity impacts of small meteoroids or other debris (NASA 2014).

Space debris is a critical issue that highlights the important privatization dynamic that the Joint Stock Company creates. As with the arrangement for LEO space travel with NASA, the American government may need a similar arrangement with a private entity to remove debris because it may not have the financial wherewithal to do the job in all of its totality all by itself. Some have already proposed to the Congress that it begin exploring the budgetary costs of debris removal and have suggested that these costs could be as significant as any major space program (Hildreth and Arnold 2014). Such difficult budget realities may necessitate that the Congress, the Obama administration, and future American administrations take the same approach to debris removal as was taken with the industry–government partnership for LEO space travel. As such, the Joint Stock Company will be poised to fulfill this vital role for the United States government as well as for the rest of the world.

There is definitely a strong business case to be made for the removal of space debris even if the most threatening debris is in LEO where there are few commercial satellites. Indeed, "orbital debris in GEO, which 'moves in an enormous doughnut shaped ring around the equator as the gravitational forces of the Sun, Moon and Earth pull on the objects,' is 'not naturally removed from orbit by atmospheric drag,' and thus is 'estimated to last anywhere from a million to 10 million years.' Moreover, it has been estimated that collision risk in GEO 'is not uniform by longitude,' but instead is 'seven times greater in regions centered around the so-called 'geopotential wells' which exert a gravity pull on drifting satellites and other debris.' According to the insurer Swiss Re, there are operating satellites worth 'hundreds of millions of dollars' that are 'in or near these locations'" (Nelson 2014).

What is more, any rocket passing through LEO to loft commercial satellites into GEO could get struck by space debris causing billion dollar investments to implode. Additionally, if collisional cascading occurs, no commercial operators will be able to access space. Collisional cascading occurs when debris strikes other debris, or other satellites, which then creates more debris, which then strikes more and more debris and satellites until so much debris is created that it encases the Earth (Brown 2012). If collisional cascading occurs, the medium of space will be barred for all participants, including commercial entities from all spacefaring nations. And even in GEO the growth of space junk may eventually become so large in the twenty-first century that orbital slots will tighten necessitating its removal to make room for new satellites.

The question of space debris has heretofore posed a quandary for American strategists. Nations from around the world from Brazil to Iran to China to North Korea are all developing space programs varying in their level of sophistication. Added to this mix are a multitude of private entities, such as Space Exploration Technologies (Space X), which are now multiplying in the medium. With the exponential growth of space activity that is set to ensue in the twenty-first century, it is inevitable that an unmanageable amount of space debris will be created in Earth's orbit. If too much debris is created, collisional cascading is sure to result. It is therefore imperative that the United States develop the capability to remove debris before it is too late.

To this end, the Joint Stock Company could undertake to modify many prototype ASAT weapons to remove debris. As debrises are also satellites of the Earth, these weapons could serve a dual purpose. Indeed, ground-based lasers and space-based lasers could be utilized to ablate debris in LEO and lower its altitude. Co-orbiting assets could be deployed in higher orbits to rendezvous with defunct satellites and move them to graveyard orbits before they collide with other satellites and create debris (Brown 2012).

While the use of lasers to ablate debris is the preferred method for its removal because they would be more cost effective and would face less technical challenges than other methods (at least the solar-pumped lasers from the inflatable solar power satellites would present this technical–economic dynamic), DARPA has nevertheless already begun exploring a variety of other exotic techniques to remove large debris. DARPA has found that "the removal of large objects generally employs advanced rendezvous and proximity operations and sophisticated grappling techniques. Various methods of capturing large objects have been proposed involving a net, inflatable longeron, tethered harpoon, articulated tether/lasso, and an electrostatic/adhesive blanket. Some solutions attached or used an active thrust device, while others made use of natural forces found in the space environment to impart a force on the debris to relocate it" (Hildreth and Arnold 2014, p. 11).

Already DARPA has been exploring cooperation between the public and private sectors for some of its activities in space. "Under a demonstration project called Phoenix, DARPA is teaming up with the private sector to harvest and 'repurpose' still functional components of nonworking satellites in GEO to create new space systems at greatly reduced cost. Beginning in 2016, the project proposes to attach nanosatellites to parts of retired US government and commercial satellites, making the debris a resource. In a process called, 'cellularization,' nanospacecraft separately carrying out functions such as power, communications, and attitude control would be launched into orbit as secondary payloads" (Anzaldua et al. 2014).

At the same time, interests from the private sector are emerging with plans to remove, recycle, "or reuse large debris in LEO. For example, three companies—Star Technology and Research, Inc., Tether Applications, Inc., and Electrodynamic Technologies, LLC—have been developing a technology called ElectroDynamic Debris Eliminator (EDDE), wherein a long conductor is energized using solar energy to thrust against the Earth's magnetic field. Operating without propellant, EDDE can repeatedly change its altitude by hundreds of kilometers per day and its orbital plane by degrees per day" (Anzaldua et al. 2014). With such developments in the offing, it would now be natural for the Joint Stock Company to fully combine the expertise that government agencies can bring with the dynamism characteristic of these nascent industry efforts into one centralized effort with the aim of removing debris to protect the energy infrastructure as well as all other critical assets in the medium. In this regard, the Joint Stock Company would recruit the expert personnel from the government agencies in question as well as acquire the smaller debris removing private enterprises that were demonstrating a critical aptitude for these pursuits. With everyone combined into one centralized effort, the Joint Stock Company will be fully poised to move out with the removal of space debris in Earth orbit.

In any event, regardless of the technique utilized to remove the debris, the assets employed on orbit in this capacity could be dually used to target enemy assets in addition. Therefore, not only would this ASAT fleet deployed under the auspices of removing debris protect the energy infrastructure and other critical assets in space, but it could also pursue other financial opportunities in the medium as well. Bounties could be placed on debris in the path of other space participants, or the first division could charge other space participants a flat fee to patrol space lanes and keep them clear of debris (Brown 2012). Perhaps the entity would even go so far as to stealthily fowl the orbits of satellites from other nations that were not under the aegis of the Joint Stock Company in space (Brown 2012). This activity would not necessarily entail a protection racket, but rather it would be similar in scope and effect as the strategy that the British Empire pursued on the high seas to protect vessels from nations with which it had trade advantages and to prey on vessels from nations with which there was trade competition. In any event, in this manner, the first division could exercise a considerable measure of control in the commons of space.

Indeed, the debris service would necessarily constitute a space "fleet in being." Its very presence would serve to deter nefarious activities that other space participants may present (Brown 2012). This would create a very favorable strategic dynamic for the Company in space.

Of significant strategic importance would be the state of readiness that the first division's forces would be in from their constant debris removal operations. These operations would prepare the first division quite well for war if it did break out in the medium. Not only would the first division be better prepared to target enemy assets in space, but it would be more equipped to deal with debris if war led to the creation of a considerable amount of debris (Brown 2012).

Another critical security dynamic related to the debris fleet would be the ability of the company to proliferate weapons capable of targeting the Earth under the auspices of the debris removal business. These weapons could range from the “Rods from God” to orbital bombardment weapons to fractional orbiting weapons to ICBMs. Such systems may prove necessary if the company is to deter or thwart potential attacks against the energy constellation.

Additionally, the debris service could perform a whole suite of services for the satellites of other space participants. These could range from maintenance to servicing to upgrades, all of which could extend the life of satellites of other space participants. These activities would increase the intelligence capabilities of the debris service tremendously and would allow the fleet to keep better track of the space environment (Brown 2012).

Intelligence

Intelligence operations would span the whole of the organization. There would be stovepipes for not only the first division, but also for the business activities of the third division and the financial activities of the fourth division as well. It is likely that the intelligence activities of the third division would be engaged in a significant amount of industrial espionage, while the intelligence activities of the fourth division would seek to ensure that the most comprehensive and highest quality of information was at the disposal of its trading operations. The intelligence activities of the first division would include security matters of course. It is anticipated that a significant amount of former CIA and DIA officials, analysts, and agents would be employed by the first division. The first division could easily afford to pay them far higher salaries than they were making at government agencies. In addition, they could become millionaires and billionaires when they received the company’s stock options. The company’s operations would obviously be far more lucrative career moves for them.

Obviously, the company would possess the most sophisticated intelligence assets in space, including photo, signal, and electronic intelligence satellites. In addition to imagery collected for security purposes, perhaps the company would also create a service to share more precise observations of the Earth with global society. Clearly, the first division would be very busy intercepting the signals of states, entities, and/or other actors that posed a risk to the company. Regarding the elint capabilities of the first division Johnson (1987) illustrates how these help determine enemy orders of battle:

> A kindred class of satellites monitor the Earth, not in the optical portion of the electromagnetic spectrum but through the radio and radar atmospheric windows. These electronic intelligence (elint) gathering satellites listen patiently to the radio and radar emissions of ground, air and sea emitters. For example, the detection and location of emissions of the

> search and tracking radars of mobile air defense units provide valuable assistance to the planning of tactical air strikes. Likewise, the interception of communications may disclose not only the contents of the messages, but also the locations and identities of the communicators. Together these types of information permit the construction of an electronic order of battle (EOB) which would influence the conduct of an engagement (60).

Such elint assets will no doubt enable the first division to detect preparations for any assault that foes may make against the company's critical assets in the medium, most notably against the artificial moons. The first division of course would also be in possession of early warning satellites for these purposes as well. Perhaps the first division will also constitute and operate a navigation constellation to augment the services that the GPS provides. Obviously, the company will develop its own set of totally secure communications satellites for its operations as well.

Cyber

Cyber operations would span the whole of the organization as would be the case with the company's intelligence operations. The cyber capabilities of the Joint Stock Company would be more than considerable due to the company's ability to compensate cyber personnel at the highest possible levels. Indeed, the first division's security operations could employ the entire NSA and would have the resources to more than double their salaries. Critically, the company could give the deftest cyber personnel enormous stock options. In this way, the company could attract the top talent in cyberspace and make thousands of cyber personnel billionaires. In fact, the company would likely be able to compensate the top cyber personnel far more than if these personnel were to take their own software companies public on stock exchanges around the world. Certainly, the company could make far more of them wealthy than would otherwise be the case at a typical software company in the IT industry. Indeed, the company could create thousands more IT billionaires than there are in all of Silicon Valley combined. What is more, the company would without doubt constitute a constellation of information assets on orbit to provide internet access to every inch of the globe.

A glance at the first division sees a global energy monopoly emerging in orbit with the medium being rapidly secured by a debris fleet. The picture then contains significant intelligence and cyber operations, all with unlimited resources.

Springer

http://www.springer.com/978-3-319-22385-8

The Digital Galactic Complex
Brown, T.
2016, VI, 84 p., Softcover
ISBN: 978-3-319-22385-8