# LD Neg

* **I negate the resolution which states, “the appropriation of Space by private entities is unjust.” Despite the claims made by the affirmative case, there are significantly greater benefits to letting private entities explore and claim territory in space.**
* **The value of the Preservation of Utilitarianism ought to be the driving force behind an negative ballot in today’s debate. We ought to be valuing how we can save or benefit the most amount of human life throughout the round and the best way to do that is to have the recognition that privatization and appropriation of space will only help the population. Utilitarianism is key because it provides a key bridge to help the MOST amount of people at any given point. Without it, we risk extinction and other ailments on multiple fronts.**
* **The criterion behind the debate is the drive of innovation within the private sector of space travel. Essentially, through innovation and competition, we can not only guarantee a clean and prosperous exploration of space but also have the opportunity to save humanity in the process.**

# India DA

#### Private sector development is happening now and is necessary to scale up and lock in India’s status as a powerhouse in space

EdexLive, 06-25-2020, "Opening space sector will enable India to play important role in global space economy: ISRO chief," New Indian Express, https://www.edexlive.com/news/2020/jun/25/opening-space-sector-will-enable-india-to-play-important-role-in-global-space-economy-isro-chief-12874.html TDI

SRO chief K Sivan on Thursday stated that opening the space sector for private enterprises will help scale up benefits from space technology and enable Indian industry to be an important player in the global space economy. "If the space sector is opened (for private enterprises), the potential of the entire country can be utilised to scale up benefits from space technology. It will not only result in the accelerated growth of the sector but also enable Indian industry to be an important player in the global space economy," the Indian Space Research Organisation chief said. Sivan said that far-reaching reforms in space technology in India will put the country in the league of the select countries. "As part of longer socio-economic reform, space reforms will improve access to space-based services for India's development. Far-reaching reforms will put India in the league of few countries with efficient promotional and authorisation mechanism for private-sector space activities," he said. Talking about reforms that the government is planning to implement in the country's space sector, he said, "Space sector, where India is among a handful of countries with advanced space technology, can play a significant role in boosting the industrial base of India." "The government's decision is to implement reform measures to leverage ISRO's achievement by opening the space sector for private enterprises," he added. He further said that "Department of Space will promote sector space activities to enable it to provide end to end space services, including building and launching of rockets and satellites as well as providing space-based services on a commercial basis." "With this, there is an opportunity for large scale employment in the technology sector and India becoming a global technology powerhouse," ISRO chief added. Sivan also talked about the government's decision to establish an autonomous nodal agency for taking independent decisions for regulating the activities of private companies. "Government has approved the establishment of an autonomous nodal agency - Indian National Space, Promotion and Authorisation Centre - for taking independent decisions with respect to permitting and regulating the activities of private companies in the space sector," said ISRO chief. "It will act as a national nodal agency for handholding and promoting the private sector in space endeavours and for this ISRO will share its technical expertise as well as facilities," he added.

#### India private sector is key to space success – low cost operations, transparency, and accountability.

Rajagopalan ’20 [Dr Rajeswari (Raji) Pillai Rajagopalan is the Director of the Centre for Security, Strategy and Technology (CSST) at the Observer Research Foundation, New Delhi., 5-24-2020, "India’s Space Programme: A role for the private sector, finally?," ORF, <https://www.orfonline.org/research/indias-space-programme-a-role-for-the-private-sector-finally-66661/>] TDI

India’s finance minister Nirmala Sitharaman announced last week that India’s private sector will play a key role in augmenting India’s space programme, and that the government intends to share the facilities of the Indian Space Research Organisation (ISRO) with the private sector. This announcement was part of the Narendra Modi government’s call for new and bold reforms in an effort to promote its ‘self-reliant India’ mission. It is the fourth segment of the Rs 20 lakh crore Aatma Nirbhar Bharat Abhiyan special economic stimulus.

Sitharaman’s announcement entails a role for the private sector, possibly with the goal of greater investments in technology development and acquisition, capacity-building and space exploration, including planetary exploration. The minister, while announcing these reforms, appeared to understand that the private sector can help augment India’s space capability. While praising the work done by ISRO, she also pointed out that the private sector is also doing a lot of work in developing space technology. She also acknowledged that the existing regulations prevent private entities from using or even testing their products.

Therefore, to level the playing field, the government “will make a provision for the private sector to benefit from the assets which are available to ISRO and for India (in general) to benefit from.” The minister also said the new reforms would allow the private sector to play an active role in “satellites, launches and space-based services”.

But as always, implementation is key. Properly executing these reforms will require enabling policies and appropriate regulatory frameworks.

That the new reforms will allow private sector players to use ISRO facilities is a big deal. This indeed must be music to the ears of commercial players who have been seeking to get a fair share of the pie in terms of manufacturing of satellites and propellant technologies, among other areas. It should not be too difficult for India’s private space sector because there is a sizeable talent pool available outside ISRO. More importantly, the entry of the private sector, as in the telecom sector, can bring several advantages in terms of cost and access.

Following the announcement, ISRO tweeted that it will follow the government’s guidelines to allow the private sector to undertake space activities in the country. Though this did not seem particularly welcoming of the government’s initiative, ISRO’s support is critical to making it a success.

ISRO has in the last few years been opening up to the Indian private space sector in a gradual manner – mostly as a matter of compulsion because ISRO simply does not have the in-house capacity to address India’s growing requirements. Today, the Indian space programme is not just about civilian applications for remote-sensing, meteorology and communication, as in the early decades. India’s space sector and its requirements have grown enormously in the last decade to include television and broadband services, space science and exploration, space-based navigation and, of course, defence and security applications.

Among others, Ambassador Rakesh Sood has articulated the need for legislation to facilitate ISRO’s partnership with industries and entrepreneurs. Narayan Prasad and Prateep Basu, two prominent faces in the Indian space start-up segment, have argued that despite ISRO’s successes, “India’s space competitiveness has suffered from the absence of a globally reputed, private space industry.”

The private sector, especially the NewSpace industry and start-ups, have an advantage in terms of low-cost operations, which itself should be a big incentive for the government to make it an active stakeholder. A certain amount of democratisation of space technology with the participation of the private sector can ensure costs are kept low. And expanding the number of stakeholders will also ensure more transparency and better accountability and regulatory practices. This has been missing in India’s space sector. The same agency has undertaken promotion, commercialisation and regulatory functions – which is not healthy.

Following the minister’s announcement, I spoke to a few key players in the private sector to capture their sense of the reforms in the pipeline. Sadly, the general mood is not one of excitement but rather to wait and watch. To them, as stated earlier, the key is implementation. One of them, who did not wish to be named, argued that unless there is a conducive structure for the private sector to engage with, the announcement is more lip service. Narayan Prasad said that there need to be basic changes for the reforms to be effective. The private sector is particularly concerned about issues such as sharing intellectual property for products developed by the private sector. Prasad argued that IP-centric policymaking has to be taken for real reform.

Right now, ISRO thinks they will use the suppliers only as manufacturing or services partners. So all IP is controlled by ISRO and suppliers just replace ISRO technicians and production facilities. This means most suppliers have no real IP of their own, and just depend on cost plus contracts from ISRO for business. The only way to change that is to create reforms where local industry can invest in building their own IP and/or products that can match global standards.

This in turn means that policymakers will need to view industry as more than sweatshops and look at what steps can be taken for IP/product development by private industry. This is the only way to integrate India’s private sector into the global supply chain. Prasad adds that if ISRO is serious about partnering with the private sector, it must spell out the requirements and select the best available. Several private-sector actors have articulated the need for an independent regulator.

This is an area that has been a common thread in many of my conversations with Indian entrepreneurs. Rohan M. Ganapathy, CEO and CTO of Bellatrix Aerospace in Bengaluru, also made a strong case for an autonomous regulator, and acknowledged a need for the government to clarify R&D risk funding, which is crucial to realise new technologies.

It is not that ISRO has not engaged the private sector. ISRO has long been associated with private firms like Larsen & Toubro, Godrej and Walchand Nagar Industries. It is just that the mode of participation envisaged through the new reforms is very different. The current mode of work, more of an outsourcing model, is becoming inadequate. In the last few years, because of significant capacity deficit, ISRO began to work with a few in the private sector such as the Bengaluru-based Alpha Design Technologies, contracted to build satellites. Similarly, Bellatrix Aerospace began to work with ISRO on advanced in-space propulsion systems. But these remain exceptions.

But ISRO does recognise the new compulsions and has been trying to change. The newly formed commercial enterprise called the NewSpace India Limited (NSIL), under the Department of Space, is an initiative to engage the private sector. NSIL is meant to help the private sector with transfer of some technologies to the private sector, especially the small satellite launch vehicle that is being developed and even the older PSLV. But the pace of ISRO’s engagement with the private sector needs to quicken.

Followed up effectively, the new government initiatives could help. Indeed, ISRO needs to expand its operations significantly if it has to remain competitive, both from a domestic and international outlook. The Indian space programme has several advantages, the most important being cost: the ability to provide reliable launches in a cost-effective manner is a big advantage. The Polar Satellite Launch Vehicle remains a tried and tested launch vehicle and has managed to remain the cheapest for launching small satellites into space. But competition in this sector is picking up.

Jeff Bezos’ Blue Origin, Elon Musk’s SpaceX and start-ups from China want a share of the global commercial market, estimated to be worth around $350 billion (Rs 26.46 lakh crore). If ISRO does not improve its launch infrastructure and increase the number of launches, it will be at a disadvantage. And despite India’s cost advantages, it has a mere 2% share of this, worth $7 billion. India can gain significantly if ISRO and the country’s private space sector can cooperate effectively and synergistically. This requires the government to actually act on the initiatives it announced.

#### India space key to soft power

Hickert 17 Cameron Hickert, Harvard’s Belfer Center for Science and International Affairs, Schwarzman Scholars, "Space Rivals: Power and Strategy in the China-India Space Race - Schwarzman Scholars", August 14, 2017, <https://www.schwarzmanscholars.org/events-and-news/space-rivals-power-strategy-china-india-space-race/> TDI

The regional rivalry between India and China has long simmered, and the next frontier increasingly appears to be space. Beyond the hard power dimension, this regional space race has taken on many of the soft power characteristics of the competition between the U.S. and U.S.S.R. during the Cold War. It should not be forgotten, “a major factor in the Asian space race is prestige, as rapidly developing countries there use technology to jockey for status. Space technology in particular, being flashy and complex, often captures the most cache.” Because soft power is about perception and attraction, demonstrating prowess in space capabilities is a crucial step in building this power regionally. Many of the feats that China and India are pursuing have already been achieved by the U.S., so mistakes are costlier in terms of international credibility – failures are perceived as worse when another nation has already been successful. Yet the attraction power of spaceflight achievements is more lucrative than in the past, as private entities around the world face tighter competition and shorter timelines in launching satellites, and are therefore willing to bring their business to any nation that can demonstrate the ability to launch cargo safely and cheaply. A prime example is India’s recent launch of 20 satellites on a single rocket; this mission included satellites from around the world, including the United States. The increased soft power borne out of a successful space program therefore is not only useful in the struggle for regional prestige, but also paves the way for increased economic success in a fast-growing industry.

#### **Soft Power is not only key to Util but also key to stopping war which otherwise leads to extinction, China war proves**

Robert Hughes, 2021

Robert Hughes, “Soft Power: What is it and why is it important?”, ACAG, 2021, 2-16-2022, <https://advance.org/soft-power-what-is-it-and-why-is-it-important/>

There’s no question that we’re living in unprecedented times. With an extremely uncertain international climate, and the looming realities of the fourth industrial and technological revolution, Australia needs, more than ever, to create a thoughtful, well-crafted ‘Soft Power’ strategy to promote, enhance and protect its interests both internally and internationally. So what does this mean, and more importantly, what even is ‘Soft Power’? ‘Soft Power’ has existed for as long as civilization; there just hasn’t always been a name for it. However, in the late 1980s, Joseph Nye, an American political scientist, introduced the term, ‘Soft Power,’ in his book, Soft Power: The Means to Success in World Politics.’ For Nye, power is the ability to influence the behaviour of others to your benefit, and there’s several ways this can be achieved. Now if we were to go back a few hundred years and ask Machiavelli, or even further to ask Sun Tzu, we’d find that their means of achieving power often involved methods of coercion such as fear tactics, or brute force, which Nye refers to as ‘Hard Power’. On the other side of this is ‘Soft Power’: the ability to attract people to want what you want. Nye stresses that getting others to want the outcomes you want can be a far more effective tool for achieving one’s goals, and he focuses on the distinction between co-opting people rather than coercing them.1 In theory this seems relatively simple. If we take a country like Australia, and look at the goals it may set itself, whether it be sustainably growing its GDP, reducing its carbon footprint or just maintaining overall safety, the only way to successfully achieve these goals is to get the nation’s people on board. But, in a democratic system with an opposing party and a country made up of numerous demographics each supporting varying opinions, this can be a lot harder than you might think. Consequently, Nye argues that “Soft Power’ is a much more difficult instrument for governments to wield than ‘Hard Power’ for two reasons: Many of its critical resources are outside the control of governments. It’s important to note that this was written at the end of the Cold War, where nations harnessed their media outlets to push political agendas. And of course while this is still pertinent today, there has been one huge change since then: the internet. Since Nye released his book in the 80s, the world has undergone a massive technological revolution. This is because 63.2% of the world’s population has access to the internet, which means over half the world’s population has access to news sources, opinions and information that may directly contradict or impede their state’s agenda. This is by no means a bad thing, a more informed and more involved population produces better governments, ones that are hiding less and less behind closed doors. But, with the freedom that comes with the internet, so do a lot of falsities, errors and bad information that mean a nation’s overall ‘Soft Power’ is in a constant state of fluctuation. The technological revolution has also led to the rise of extraordinarily powerful non-state parties, such as large tech companies that do not answer to one nation. These organisations have the ability to sway massive numbers of people, as seen in the 2016 Cambridge Analytica scandal, and are not always at the beck-and-call of the nations they reside in. ‘Soft Power’, in its essence, takes a long time to utilise. Due to its complexity and fickle nature, it tends to only work indirectly. States can’t just use the ‘Soft Power’ they have to achieve their desired outcomes; instead they must use it indirectly, shaping the environment for policy and co-opting people to want what they want. Because of this, it sometimes takes many years for there to be a noticeable change, let alone the ability for them to achieve their goals. So now we know a bit about what ‘Soft Power’ is, you’re probably wondering where the real world applications lie, and how much Soft Power’ nations actually have. But how does one go about measuring something that is in essence, so theoretical? While measuring ‘Soft Power’ will never be a precise science, there have been many attempts at quantifying it. The first attempt to properly measure the ‘Soft Power’ of nations through a composite index was created and published by the Institute for Government together with the media company Monocle in 2010.2 Monocle organised the metrics for this evaluation according to a framework of five separate indices: Culture – The extent of the Nation’s cultural appeal. Diplomacy – The strength of its diplomatic network. Education – The global reputation of its higher education system. Business/Innovation – The attractiveness of a country’s economic model, and its digital engagement with the world. Government – The quality of a country’s political institutions. Within these indices, the list is calculated using around fifty factors that indicate the use of ‘Soft Power’. These include the number of cultural missions such as language schools, Olympic Medals and the quality of a country’s architecture and business brands. Of course, the factors actually involved in a nation’s full ‘Soft Power’ would be far greater than these lists measure, because some of these factors aren’t quantifiable, and many haven’t been recognised. However, ranking nations in this way has been mostly successful, with most countries setting specific goals to rank higher on the ‘Soft Power’ lists. According to Brand Finance’s 2021 survey, Germany tops the international ranking, closely followed by Japan at number two, then the United Kingdom in third place. According to Brand Finance’s CEO, David Haigh, Germany’s first place, having moved up two spots since last year, is largely due to the steady leadership of Angela Merkel and her scientific, data driven response to the COVID-19 pandemic, ‘epitomising her renowned credibility.’ For the most part, COVID has played a huge role in this year’s soft power rankings, as it offered the masses a much clearer view of their nations, and said nations’ abilities to handle and control an unprecedented situation. For example, coming in at second place, Japan jumped six rankings due to its own COVID response, as well as reaping the benefits of, ‘strong brands, solid consumer spend, and high levels of business investment.’ However, the United States, traditionally known as the ’Soft Power Super Power,’ has dropped to sixth place, due to a turbulent election year and extreme mismanagement to the global pandemic. As for Australia, our soft power has been steadily rising year by year, and has proven to be the fastest growing nation among the top ten. This has come not only due to our comparatively successful response to the COVID crisis, but also due to a precise attempt at improving some of our Soft Power pillars, such as our International Relations and Media Communication. The idea of soft power existed before there was an agreed upon method of measuring it, so why do countries pay so much attention to their ranking, and put so much time, energy and resources into improving it? The answer to this involves another complexity that comes with the pursuit of ‘Soft Power’. This is because a high ranking on the ‘Soft Power’ index actually increases one’s ‘Soft Power’, particularly when we keep in mind how the outside world perceives a country. As a country rises up the ‘Soft Power’ list, more and more outside parties align themselves with the common goals of that country and as a consequence, more ‘Soft Power’ leads to a higher ranking on the index, which in turn leads to more ‘Soft Power’. However, with more and more power comes a greater chance of crashing. Take the USA for example. They haven’t specifically crashed or fallen hard on any of the ‘Soft Power’ indexes, but their ranking has always been one of the ficklest. Due to the highly publicised nature of their government, and the wide reach of their media, it’s just as easy to dissuade a huge amount of people as it is to co-opt them. Ok, so just like the theory, it’s clear that you could spend your whole life getting down into the nitty gritty of measuring ‘Soft Power’, as some people do. But you probably don’t have time for that, or you might even be wondering why it matters at all. Despite its difficulty to measure, ‘Soft Power’s’ importance to a country is undeniable. A country’s ability to align its people to a common goal is paramount in achieving it. And now, in the modern era, it could be seen to be easier and easier for nations to connect with their people, thanks to digital communication: The Government recognises the greater ability in a globalised world of individuals and non-state actors to shape outcomes on issues of importance to Australia. Digital communication also allows non-government actors and nation states alike to influence public attitudes at a place and scale not witnessed before.Here we see, in a past Advance Soft Power report, just how much importance the Australian Government places on Soft Power. So what is Advance doing? Well as we can see above, a country’s soft power is hugely reliant on how the world perceives it (like how Merkel’s leadership managed to take Germany to first place). But it’s also imperative that, for Australia’s soft power to grow, we’re constantly learning and adapting what the rest of the world is doing, and utilising all of the resources we have. While Australia has a vast and impressive source of knowledge right here, we also have so many amazing expats living, working and learning overseas. We love to see this, we love showing off the incredible things Australians are constantly doing on the global stage. And with each accomplished expat, comes an increased perception of Australia. Seems simple right? It is. Advance is here to find those amazing expats and show not only Australia, but the rest of the world, all the incredible work they’re doing. We’re here to help them in any step of the journey, whether it’s finding a network in their new country, or returning home and utilising the skills and knowledge they learnt in their time overseas. It’s our people that are our greatest resource, and if we can continue to connect them and encourage them to achieve amazing things, Australia’s soft power will continue to steadily rise as it has done for the past decade.

### ! -- Conflict

#### Indian soft power key to dampening conflict and foreign diplomacy

**Ritambhara**, 4-30-20**13**, "On Indian Public Diplomacy," E-International Relations, <https://www.e-ir.info/2013/04/30/on-indian-public-diplomacy/> // TDI

The 21st Century realignment of power is becoming more of a reality day-by-day, with the influence of Western powers waning to some extent and an increasingly assertive role being played by the rising powers like China and India in the global context. This trend has most recently been hastened by the global economic downturn that comparatively had less effect on the Chinese and Indian economy compared to those of the United States and Europe. India’s exponential economic growth and recognition of its de-facto nuclear status by the U.S. and other powers (after the Indo-U.S. nuclear deal) have altered external perceptions of India, with the country being viewed as an emerging power with expanding global clout. In this scenario, India’s attempt to amplify its soft power through public diplomacy becomes crucial. India as a new claimant of a place at the high table in the world has huge stakes in the arena of global politics, and thus maintaining and enhancing its influence remains a top priority for the country. In the 21st century there has been more of a need for states to use soft power so as to enhance one’s attractiveness in international arena and to show one’s better side in order to stimulate cooperation and dampen resistance, particularly concerning security policies. In this context, **public diplomacy has become a very important instrument of soft power**, as well as being a vital tool of Indian foreign policy. The undercurrent of Indian public diplomacy is to avow India as a rising power of undeniable international significance and influence, which is consistent with India’s demand to win a place at the high table by being granted the permanent seat on the United Nations Security Council. India has already proved itself as a capable military and economic power in the world, yet somehow it finds struggles to project this power to the world. There are limits on what hard power can accomplish and thus a judicious **mix of hard and soft power, or what is termed as ‘smart power’[1], is neede**d. Thus, the principal modus operandi for augmenting India’s influence in the world can be achieved by expanding its soft power. Soft power, the term coined by Joseph Nye, has become a portent measure of a country’s power and influence in the world today. Soft power is the ability to get what one wants through attraction rather than coercion or payments.[2] Soft power largely emanates from a country’s culture, its political values and institutions and its foreign policy.[3] India finds itself well-placed in possessing soft power resources because of its rich culture and history, its democratic credentials, its technological advancement, its large and influential diaspora and the leadership India wields among the developing nations through multilateral institutions like Non-Alignment movement. Thus, what distinguishes India’s claim to global leadership is its unique, unobtrusive, persuasive “soft power” or what South Asia expert Steven Cohen calls “India’s Reputational Power”.[4] One of the most important tools for exercising a country’s soft power is public diplomacy. Public diplomacy can be defined as, “a Government’s process of communicating with foreign publics in an attempt to bring about an understanding for its nation’s ideas and ideals, its institutions and culture, as well as its national goals and current policies.”[5] It can be seen as an instrument that a country’s government uses to mobilize its resources to communicate with and attract the public of other countries (rather than merely their governments) to promote its national interests through a number of means, such as broadcasting, direct outreach programmes, cultural diplomacy, educational and professional exchanges, and so forth. Public diplomacy is not only limited to influencing foreign publics but also for gaining feedback on the foreign perception of the host country. However, the most significant role of public diplomacy is to inform, explain and interpret the nation’s goals and strategies to foreign publics, in order to garner their support and create goodwill among other nations in order to achieve its national interests. Evolution of Public Diplomacy Although public diplomacy is a relatively new concept in the sphere of international affairs, it has promptly become an important foreign policy tool for many governments. While the terminology is new, the practice of public diplomacy is quite old. Public diplomacy was first used by the American government during World War I when President Wilson created the committee on public information (also called the Creel Committee) whose task was to make the US war aims known all over the world. It was later successfully used during World War II to fight the Nazi propaganda. Things took a more concrete shape with the creation of the United States Information Agency (USIA) in 1953 to inform foreign audiences and explain US objectives to influence and gain support of foreign public opinions, which served US interests immensely during the Cold War. However, the U.S. lost interest in public diplomacy initiatives after the Cold War[6], only to be rudely awakened and have to reinvigorate public diplomacy after the events of 9/11 owing to increasing anti-Americanism in some parts of the world. It is not only the U.S., but every other power like China, U.K., Russia and France are all investing in public diplomacy initiatives today, largely because of an ever increasing global integration, no country can stand in isolation and thus co-optive and soft power have become the core realities of the day. Countries like France and the United Kingdom have been running successful public diplomacy campaigns all over the world, establishing cultural centers for example, but now newly emerged powers like China are leaving no stone unturned to engage the world through its public diplomacy activities. India, with its high stakes as an emerging power in the world cannot lag behind in this “Battle of Ideas”. A new understanding of public diplomacy is emerging in the highly globalized and integrated world of today. Public diplomacy can no longer be about straight-line propaganda or one-way communication in this information age because conditions for the production and enactment of public diplomacy have changed significantly because of the ways that global “interdependence” has radically altered the space of diplomacy. [7] Public diplomacy today has become more inclusive where it includes multilevel relations conducted by MNC’s, NGO’s, private groups and social movements using new technologies of communication to interact with and petition foreign publics.[8] Emphasis has to be laid on adopting a more erudite grassroot people-to-people communication, for two-way engagement as public diplomacy is not only about communicating foreign policy but also about developing a long term understanding of people, culture and values of the host country. Cultural diplomacy has to be a part and parcel of public diplomacy for it to succeed in the globalized world. Public Diplomacy today can no longer be a one-size-fits-all approach. Rather, it has to be tailored individually in consideration of the political and cultural environment of a country. Thus public diplomacy needs to be dynamic, flexible, and capable of adapting to changing circumstances. Background of India’s Soft Power India is one country that could always count itself among the few nations with strong cards in the arena of soft power, even when it was deficient in hard power.[9] India began its journey as a self-determining state in 1947 with a soft power bang that faded away after its greatest exponent, the country’s first Prime Minister Jawaharlal Nehru, died in 1964.[10] During Nehru’s time, India lacked hard power resources, being a poor economy coupled with weak military capabilities. Despite this, India possessed unparalleled soft power among the developing nations, as Indian foreign policy was more idealistic in nature and vehemently campaigned for peaceful co-existence and economic equality in world economy. The number of diplomatic forays Nehru made into distant conflicts around the world was dizzying and brought instant recognition to India as a responsible Asian country that was trying to solve global problems.[11] However, India had to soon face the harsh realities of international politics, where its hard power capabilities were soon tested by China in the 1962 war, a war where India had to face stark humiliation. The 1962 war with China, which was followed by the 1965 war with Pakistan, forced India to reassess its priorities, with the country choosing to focus on building its hard power capabilities and strengthening its hold in South Asia while minimizing its global role. India began flexing its muscles in South Asia and played the role of a regional hegemon as illustrated by the clandestine role India played in the 1971 Pakistan-Bangladesh war and later humanitarian military intervention in Sri Lanka in 1987. Ironically, even as India practically disappeared as an actor[12] with influence in far-flung regions of the Global South like Africa and Latin America by the turn of the century, it began to improve its hard power attributes by logging higher economic growth and military prowess.[13] During that period India’s regional power rested on her hard power capabilities ranging from diplomatic coercion to economic sanctions to military interventions.[14] Soft power strategies like economic cooperation and the promotion of common political values only played a secondary role.[15] However, India could not play a very successful role as the regional hegemon, as India had to soon withdraw its IPKF forces from Sri Lanka in the face of opposition from both the public and the Government in Sri Lanka. India soon lost out on the goodwill that it had created for itself in Bangladesh among both the Bangladeshi Government and public, when it had helped them in attaining their freedom from Pakistan. Adding to India’s woes was the Pakistan-sponsored cross-border terrorism in Kashmir. India, once again faced with a changing international environment (the collapse of the Soviet Union) and the regional dynamics, re-evaluated its approach towards and South Asia and the world in the form of the Gujral doctrine.[16] The Gujral doctrine emphasized that India should play a bigger role in helping its neighbors while not requiring reciprocation and at the same time avowing a policy of non-interference in internal affairs and promotion of common economic interests and strengthening regional cooperation through SAARC. Thus India once again began to lay emphasis on the use of soft power in its foreign policy conduct, as it had already proved its mettle as a rising power with proficient hard power capabilities. At the turn of the 21st century, India found itself in a very good position to play a bigger role in global politics owing to its military and economic power coupled with a huge soft power potential. India at the same time realized that hard power is not a one-stop solution to all of a country’s problems and neither is soft power. Soft power is one arrow in a nation’s security quiver; it is not an all-purpose panacea.[17] Thus an over-reliance on either one in the present context of geopolitics will only prove to be detrimental to India’s future. India’s Soft Power Potential India has often been regarded as a “cultural superpower”[18] with an expansive hoard of soft power resources. Very few countries can match the rich history, culture and civilization of India that creates an unparalleled interest and appeal for India abroad. In addition to this, India’s vibrant and thriving democracy, its independent and free media, its democratic institutions and its increasingly aware and pulsating civil society all contribute to India’s soft power. Along with this, India’s values of non-violence (ahimsa) and peace and the use of these methods in its struggle against colonialism have inspired and continue to inspire generations of leaders all over the world. Additionally, India’s exponential economic growth and innovation and leadership in information technology, have earned India, admiration the world over. India’s entertainment industry and Bollywood have given India an edge over many other countries in the world, and have enhanced India’s image. Indian movies find a large number of takers in not only Asian countries (with some similarity of culture), but are climbing the popularity charts rapidly, in Africa, the Americas and Europe as well. Indian music, dance, fashion and art add to India’s growing soft power base. Along with this, the contribution of new-age Indian authors to English literature has to be credited in increasing awareness and interest about Indian society, polity and culture. The popularity of Indian cuisine and Yoga all over the world has only amplified the world’s fascination with the Indian nation. The large and influential Indian diaspora is another one of India’s assets in the realm of soft power. Indian diaspora has many a times played a pivotal role in shaping up positive policies towards India in many countries, especially the United States. India’s commitment to humanitarian rights in the world and its role in the UN peacekeeping mission has earned India a lot of respect. In the information age, Nye has argued, the side with the better story to tell often wins. India must remain the “land of the better story.”[19] As a society with a free press and a thriving mass media, whose people whose are daily encouraged to unleash their creative energies, India has an extraordinary ability to tell stories that are more persuasive and attractive than those of its rivals.[20] India has to compete with soft power of other countries, especially China in the time to come, as China expands its influence gradually all over the world. **India, in some ways has an advantage in this ‘competition of influence’ over China because of its soft power resources**. As the world’s largest democracy, with a vibrant press and thriving entertainment industry, India has huge soft power advantage over authoritarian China and its state-controlled media. The implication is India can take advantage of that goodwill as Asia’s two giants’ battle for influence in the region and around the world.[21] Another point is that India’s rise, unlike the rise of China, is not being viewed with trepidation and alarm in many countries.[22] India derives real political mileage from the prestige attached to its title of “world’s largest democracy”.[23] Being a democracy, India can assert a political influence in the world, especially now, when more and more countries are clamoring for democracy, as witnessed in the Arab Spring. Indian Public Diplomacy Initiatives Undertaken Since 2006 The Public Diplomacy Division of the Ministry of External Affairs was established in May 2006 with an aim to “educate and influence global and domestic opinion on key policy issues and project a better image of the country commensurate with its rising international standing.” Closely modelled after the U.S. State Department’s approach to public diplomacy, the Division will attempt to “sensitize and influence think tanks, universities, media and experts to create a more nuanced understanding of the government’s stance on tricky issues”. [24] It’s not only the public diplomacy division of the MEA that’s engaged in promoting India’s image abroad, but is also aided by Indian Council for Cultural Relations (ICCR), which remains the pre-eminent instrument of cultural diplomacy. The Ministry of Information and Broadcasting also lends support to the public diplomacy initiative with the ministry’s strategic use of the media, which is “responsible for international cooperation in the field of mass media, films and broadcasting, and interacts with its foreign counterparts on behalf of the Government of India.”[25] Apart from these, many other Government agencies carry out programmes that promote the Indian image abroad and engage in public diplomacy, both independently and collectively. Brand India was one such campaign that was organized by Indian Brand Equity Foundation and the Ministry of Commerce and Industry, Government of India, and the Confederation of Indian Industry. The Foundation’s “primary objective was to build positive economic perceptions of India globally. It aimed to effectively present the India business perspective and leverage business partnerships in a globalizing market-place.”[26] To this end the Foundation developed a number of promotional campaigns, including brochures, films, print ads, and panels which emphasized India’s strong economy and encouraged national and international investment.[27] Many notable initiatives have been undertaken by the Indian government to engage in an effective public diplomacy campaign in order to promote India’s interests. Some of these programmes have been campaigns like ‘Pravasi Bharatiya Divas’ and ‘Know India’ programme specifically targeted at the huge and influential Indian diaspora that cannot not only, aid India’s development but as well as, promote its interests all over the world. Programmes like ‘Pravasi Bharatiya Divas’ and ‘Know India’ campaign have met resounding success as the number of delegates taking part have increased rapidly year after year. Other initiatives include publications, documentary films and cultural events that showcase different facets of the Indian nation. One such popular publication is the “India perspective” magazine that is published in 17 languages and distributed over 150 countries in the world. The magazine seeks to project India’s rich cultural heritage, its composite pluralistic society as well as its vibrant economy. The Indian Public Diplomacy Division also partners with major domestic and international universities, think tanks and research organizations to organize seminars and conferences on subjects that are relevant to India’s concerns, and hosts delegations from various countries and organizations to provide them with a broad-based exposure to India; along with organizing lectures and other events within India with the objective of fostering a more informed discourse on India’s foreign policy.[28] These include lecture series on Indian foreign policy that have been organized by the Ministry of External Affairs in universities in India and abroad in UK, Indonesia and South Korea. One such conference and workshop was organized in December 2010, by the Ministry of External Affairs and the Centre for Media Studies, titled “Public Diplomacy in the Information Age”. Attended by scholars, journalists, business leaders and diplomats, the conference was aimed at exploring India’s public diplomacy potential. The conference helped reach some key conclusions as well as the reasons for embarking upon active Public Diplomacy.[29] Other than these, Indian diplomatic missions regularly organize Indian film and music festivals locally, where both commercial and classical music and films are screened. India to increase its outreach to foreign public, has invested in public diplomacy 2.0 to promote a two-way communication, which stresses more on ‘listening’ to the foreign public rather than ‘telling’. The Indian Public Diplomacy Division has also taken to the social media in a big way by creating and regularly updating its accounts on Twitter, Facebook and YouTube. As a part of its outreach programmes the Public Diplomacy Division has also tied up with the ‘INDIA-future of change’ (IFC) initiative, which seeks to emphasize India’s position as a catalyst of change. IFC is a five-year initiative that promises to take India to the world, and get students and professionals across geographies to compete, collaborate and strengthen ties between India and the world.[30] The initiative signifies an innovative effort at communicating the emerging realities to a global audience, and managing a collaborative dialogue of what ‘Brand India’ begets as it readies to become a global power. Success Stories of Indian Public Diplomacy India has played a significant role in providing aid and development assistance to many countries in Africa and Asia. In Africa, for example, India has reached out to countries including Senegal and Ghana to help with projects ranging from rice production to information technology development. India has played a major role in infrastructural development in Afghanistan by building roads, highways, hospitals, schools, etc. which have won India not only admiration in Afghanistan but elsewhere as well. The role India plays in UN peacekeeping forces further augments India’s goodwill in the world; the Indian help in disaster management and assistance during the 2004 tsunami in South and South-East Asia and the Pakistan earthquake of 2005 have been successful exercises in Indian public diplomacy. There are instances when India has used public diplomacy effectively as a foreign policy tool, as demonstrated in 2009, when the Indian Prime Minister Manmohan Singh used the meeting with Pakistani President Zardari, first one after 26/11 Mumbai terror attacks, on the sidelines of the Shanghai Cooperation Organization Summit in Yekaterinburg to drive home his concerns. On another occasion, he spoke of the sustainability of the Indian way of development as being inclusive, tolerant and plural in a clear reference to China.[31] Thus, the Indian government is slowly and steadily using public diplomacy to further its foreign policy interests in the world.

### PPP CP

#### CP text: The United States federal government ought to fund a public-private partnership for deep space exploration.

**The CP is key to solving the DA and perpetuates the Value in the debate; by allowing a public private partnership it guarantees the development of India’s private program but also allowing breathing room for the affirmatives impacts to be solved for. This not only solves and gives you a reason for a neg ballot but also is the greatest example of Util in the debate.**

Galeon 17 [(Dom, writer for Futurism), “SpaceX Asks the U.S. To Fund a Public-Private Partnership for Deep Space Exploration,” July 14, 2017, <https://futurism.com/spacex-asks-the-u-s-to-fund-a-public-private-partnership-for-deep-space-exploration>] TDI

SpaceX Asks the U.S. To Fund a Public-Private Partnership for Deep Space Exploration The best chance of success could come from pooling our resources. / Off World/ Deep Space Exploration/ NASA/ Public Private Partnerships SpaceX/Flickr Image by SpaceX/Flickr WORKING TOGETHER Some 10 years back now, the National Aeronautics and Space Administration (NASA) decided to work with private space companies to ferry people and cargo to the International Space Station (ISS). At the time, the space agency perhaps didn’t expect that it was heralding in a new era in space exploration. Both NASA and private agencies like SpaceX and Blue Origin have benefited from the collaboration. The former is able to save on costs, while the latter get to pursue their own individual programs, such as perfecting their reusable rocket technologies for commercial use. Without this partnership, these companies would not have been able to grow and develop at the same rate. Thus far, the joint missions have been limited to just orbital and near-orbit launches, like the Commercial Orbital Transportation Services (COTS) program, but SpaceX wants that to change. At a hearing of the U.S. Senate’s Subcommittee on Space, Science, and Competitiveness on Thursday, SpaceX’s senior vice president for global business and government affairs Tim Hughes asked the U.S. government to open up deep space exploration for similar public-private partnerships. “The principles applied in past programs for low Earth orbit capability can and should be applied to deep space exploration,” he said, referencing the COTS program. ADVERTISEMENT A DEEP SPACE FUTURE In order for the U.S. and for humankind to establish a more permanent presence in space, Hughes asserts that the government should fund a COTS-like program for deep space. It won’t really be a matter of funding the competition, he argued, because the program could run parallel to NASA’s existing deep space exploration plans, such as the Space Launch System (SLS) and the Orion spacecraft. Living Off The Land: A Guide To Settling Mars [Infographic] Click to View Full Infographic “I think [these] can be readily supplemented with public-private partnerships to allow us to sustain a permanent presence in space,” said Hughes. NASA could impose “high level requirements” for this deep space partnership, just like it does with COTS, Hughes added. The partnership could prove particularly beneficial for NASA right now given the recent reports saying it doesn’t have the funding needed for its Mars mission. Of course, as with any change, push back is to be expected. For one, more established aerospace firms that already work with NASA — Lockheed Martin and Boeing, among others — might not be in favor of this idea. The important thing, however, is to realize that deep space exploration is an entirely different ballgame than missions in near-Earth orbit, and the best chance of success may come from pooling our resources.

#### The CP turns the aff and prevents stifling of innovation.

Van Burken 20 [(Rebecca, technology policy analyst at Reason Foundation) “Biden Can Utilize Space Companies and Public-Private Partnerships,” December 14, 2020 https://reason.org/commentary/biden-can-utilize-space-companies-and-public-private-partnerships/] TDI

Biden Can Utilize Space Companies and Public-Private Partnerships The commercial space industry is making NASA's operations more cost-effective and encouraging innovation. By Rebecca van Burken December 14, 2020 President-elect Joe Biden will predictably distance himself from many of the Trump administration’s policies and positions, but its openness to commercial space partnerships should not be among them. The expansion of public-private space partnerships that began during the Obama administration has continued during the Trump administration. These public-private partnerships have helped lead to many major space successes, including crewed-launches returning to American soil through SpaceX and the first-ever civilian passenger on a private suborbital spaceflight as part of Virgin Galactic’s 2019 VSS Unity SpaceShipTwo launch. These successes, and others, reflect positively on the U.S. space sector. However, they would not have happened without the entrepreneurial nature of commercial space. Unlike government engineers and scientists, commercial space operations are not constrained by government bureaucracy nor reliant on taxpayer funding. This allows commercial space companies to explore some seemingly far-fetched ideas, like 3D printing of small rockets, a concept being pioneered by the small start-up Relativity. Commercial space companies must also develop and maintain a competitive edge to survive in the market. Significant competition ultimately creates less-costly services that give NASA more bang for its buck when developing new technology. Competitive market pressures have created inspiring innovation exemplified by SpaceX’s reusable rocket technology and proposals for recycling and turning discarded orbiting tanks into space stations. Without the federal government’s continued openness to commercial space, innovation, and invention in the U.S. space industry could be stifled. Commercial space continues to show up when the government needs new services. Over the last few years, we have seen amazing new technologies developed to track environmental and climate concerns. This is, in part, because NASA has entered into deals with private companies like Planet that are able to analyze data collected by satellite imagery. Planet has stakes in defense satellite imagery but has expanded its portfolio to collect data for climate scientists and researchers to use. Its constellation of 120 satellites is at work photographing every portion of the world at least once a day, which provides constant and up-to-date environmental information. By maintaining deals like that with commercial satellite companies, NASA can avoid the costs of creating its own satellite constellation and other remote sensing technology. Additionally, NASA does not need to focus its energies on updating technologies to keep up with new software and technological capabilities. Companies that worry about competition in the market naturally reassess their services and the burden of doing this should be put on private industry, not on the government. Biden’s team should seek out the most effective private partners, hiring new talent in civil programs to use these systems. This would also free up funding for crewed space exploration. In addition to looking to develop new partnerships for space-related efforts, a Biden administration should reassess the government’s old partnerships. Prior to the election, Reuters reported that some Biden associates believe he may try to continue funding the International Space Station (ISS) beyond its planned termination in 2025. Reuters reported: …Biden, on the other hand, would likely call for a delayed moonshot and propose a funding extension for the International Space Station if he wins the White House, according to people familiar with the fledging Biden space agenda.Pushing back the moon mission could cast more doubt on the long-term fate of Boeing Co’s Space Launch System (SLS) rocket, just as Elon Musk’s SpaceX and Jeff Bezos’ Blue Origin scramble to bring rival rockets to market as soon as next year. Extending support for the space station for a decade would also be a major boost for Boeing, whose $225 million annual ISS operations contract is set to expire in 2024 and is at the depths of a financial crisis caused by the COVID-19 pandemic and the 737 MAX grounding after fatal crashes. This directly contradicts the Trump administration’s efforts to cease funding for the archaic space station by 2025. If Biden were to continue funding this aging facility via NASA it would drain funds that could be used for more important space activities, including manned missions. Commercial companies are primed and ready to take over the space station’s functions, and NASA should allow them to do so. If Biden has taxpayers and NASA continue to fund the ISS, it would most likely continue to contract with a company that famous for draining government money—Boeing. The partnerships with Boeing are the types of space policies the incoming Biden administration should be reviewing. It should ask Congress for a Government Accountability Office audit of Boeing’s work on the Space Launch System (SLS). The contract is for the development of a rocket with heavy-lift capacities that is designed to bring humans and cargo to the moon and back. Unfortunately, it has had numerous delays and cost overruns and is still not ready for a test flight, as Bloomberg reported in August: Boeing Co.’s Space Launch System, the largest rocket in NASA’s history, will carry a price tag of at least $9.1 billion — or 30% more than the previous estimate for a key element in the agency’s plan to return to the moon. Additionally, the costs for new ground infrastructure at Florida’s Kennedy Space Center to support the deep-space exploration program has jumped to $2.4 billion, Kathy Lueders, NASA’s associate administrator for human spaceflight, said in a blog post Wednesday. That’s also a 30% increase, the National Aeronautics and Space Administration said in an email Thursday. While we wait for Boeing to reuse obsolete space shuttle hardware on SLS, companies like Blue Origin and SpaceX are continually reusing entire launch boosters. Biden’s administration needs a real review of whether it would be more cost and time effective to work with companies like SpaceX or Blue Origin. SLS is estimated to cost NASA $1 billion or more for each launch, after having already consumed $18.3 billion since 2010. By contrast, SpaceX has had its self-funded heavy-lift rocket Starship in development since 2012 and has been doing successful prototype tests since 2019. Another space entity that will be a key issue for the Biden administration is the military agency, U.S. Space Force, created by President Trump. Reason magazine had detailed the numerous reasons a Space Force should not have been created. Now that it does exist, the Space Force should be viewed as an agency that does not need to spend taxpayers’ money to create its own technology for its missions. Instead, it should use the readily available market of commercial partners ready to contract services. Space News recently reported that Space Force is just now learning of the private sector’s capabilities: [Gen. John “Jay”] Raymond said in years past the only commercially viable services have been space launch and communications provided by geosynchronous satellites. But the Space Force is now becoming aware of other capabilities that are being offered commercially such as space tracking data, weather data and on-orbit satellite servicing. Raymond, chief of operations for Space Force, has previously committed to working closely with commercial satellite companies for space-related missions. Col. Michael “Hopper” Hopkins, commander of NASA’s SpaceX Crew-1 mission, was commissioned into the Space Force and began a new line of Space Force officers expected to launch to the ISS. To facilitate continued partnerships between Space Force and private enterprise, the Biden administration could back an initiative currently proposed to Congress that Space Force acquisitions be “speedy and agile.” Flexibility for Space Force would include pushing acquisition power to the lowest level of management and removing bureaucracy to make its programs more efficient. We are at a pivotal moment in the space industry’s history. The federal government has the opportunity to partner with space industry innovators like Elon Musk, Jeff Bezos, and Richard Branson, and ensure there’s the opportunity for new space startups to emerge and add value to the market. The other path, a government and NASA-centric approach to space, would likely stifle technological developments and breakthroughs by private companies, cost taxpayers a lot more money, and cause the United States to fall behind other nations in a number of key areas.

## Neg – case

### 1NC – Privatization good

#### Privatization is key to space exploration and maximizing public sector efficiency.

Houser 17 [(Kristen, staff writer at Freethink, where she covers science and tech. Her written work has appeared in Business Insider, NBC News and Futurimsm), “Private Companies, Not Governments, Are Shaping the Future of Space Exploration,” June 12, 2017, <https://futurism.com/private-companies-not-governments-are-shaping-the-future-of-space-exploration>] TDI

Private Companies, Not Governments, Are Shaping the Future of Space Exploration The power is in our hands. / Off World/ Blue Origin/ NASA/ Space Race 2 0 SpaceX / Flickr Image by SpaceX / Flickr SPACE RACE 2.0 Sixty years ago, the Soviet Union launched the first artificial satellite into orbit. The event served as the starting pistol in what would come to be known as the Space Race, a competition between the U.S.S.R. and the United States for spaceflight supremacy. In the decades that followed, the first human reached space, a man walked on the Moon, and the first space stations were built. The U.S.S.R. and the U.S. were soon joined by other world powers in exploring the final frontier, and by the time the Soviet Union was dissolved in 1991, the contentious Space Race was something of a distant memory. The World’s Top Space Agencies [INFOGRAPHIC] Click to View Full Infographic In recent years, however, a new Space Race has taken shape—Space Race 2.0. Rather than powerful nations guided by presidents and premiers, however, the competitors in this race are tech startups and private businesses spearheaded by billionaire entrepreneurs. And while the current atmosphere is far less contentious than that of the first Space Race (save the odd tweet or two), the competition is just as fierce. A CROWDED FIELD SpaceX, Blue Origin, Bigelow Airspace, Virgin Galactic, Boeing, Lockheed Martin… Not only has the number of private companies engaged in space exploration grown remarkably in recent years, these companies are quickly besting their government-sponsored competitors. ADVERTISEMENT “We’re starting to see advances made by private entities that are more significant than any advances in the last three years that were made by the government,” Chris Lewicki, CEO and President of Planetary Resources, tells Futurism. Amazon CEO Jeff Bezos’s Blue Origin and Tesla CEO Elon Musk’s SpaceX are arguably the two companies that are setting the pace. In November 2015, the former completed the first successful vertical rocket landing after sending their New Shepard 100 kilometers (62 miles) into the air. SpaceX landed its own rocket a month later, only they did so with a craft twice as heavy as Blue Origin’s and traveled all the way into space first. A month after that, in January 2016, Bezos’s company became the first entity to re-launch and re-land a previously used rocket. SpaceX followed suit in 2017. “The government was never able to [build reusable rockets], but now, two private companies within the space of the same year have done that,” points out Lewicki. Not only are private companies already surpassing their government counterparts, several are poised to widen their lead in the coming months and years. ADVERTISEMENT If all goes according to plan, when SpaceX’s Falcon Heavy launches in September, it’ll take the title of the world’s most powerful rocket away from NASA’s Saturn V. Virgin Galactic is already selling tickets for what it expects to be the first private spaceflights, which will take place aboard the sleek VSS Unity. SpaceX plans to send space tourists to the Moon in 2018, and then in 2024, the company hopes to launch a system that will take people all the way to Mars…roughly 5-15 years before NASA expects to do the same. ALL ON THE SAME TEAM Private companies may be in the lead, but the finish line for this Space Race isn’t exactly clear. The first iteration was arguably “won” when Neil Armstrong took his first steps on the Moon, so does this sequel end when we establish the first Moon base? When a human walks on Mars? When we leave the solar system? Truthfully, the likelihood of humanity ever calling it a day on space exploration is slim to none. The universe is huge, with galaxy estimates in the trillions, so the goalpost will continue moving back (to bring another sport into the analogy). Rather than focusing on competing in what is ultimately an unwinnable race, private and government-backed space agencies can actually benefit from collaboration thanks to their inherent differences. “The way that SpaceX, Planetary Resources, or Virgin Galactic approaches space exploration is going to be very different from NASA or the Air Force,” explains Lewicki. Private companies aren’t beholden to the same slow processes that often stall government projects, and they can secure or reallocate funding much more swiftly if need be. However, unlike agencies like NASA, they do have shareholders to keep happy and a need to constantly pursue profitability. ADVERTISEMENT The two sectors, therefore, have a tremendous opportunity to help one another. Private companies can generate revenue through government contracts —for example, NASA has contracted Boeing to transport astronauts to the International Space Station (ISS), and SpaceX just closed a deal with the U.S. Air Force to launch its secretive space drone. This leaves the government agencies free to pursue the kind of forward-thinking, longer-term research that might not immediately generate revenue, but that can be later streamlined and improved upon in the private sector. Ultimately, Space Race 2.0 has no losers. The breakthroughs happening in space exploration benefit us all, and truly, a little friendly competition never hurt anyone (unless you count the egos bruised by those tweets).

#### Space exploration fails without private sector leadership.

WAMU 20 [(interviewing Ariel Ekblaw, founder and lead of MIT Media Lab’s Space Exploration Initiative and Charles Bolden, NASA administrator from 2009-2017) “How Private Companies Are Changing The Future Of Space Exploration,” February 6, 2020, https://wamu.org/story/20/02/06/how-private-companies-are-changing-the-future-of-space-exploration/] TDI

How Private Companies Are Changing The Future Of Space Exploration LISTEN SpaceX founder Elon Musk addresses the media alongside NASA Administrator Jim Bridenstine, and astronauts Doug Hurley and Bob Behnken, during a press conference announcing new developments of the Crew Dragon reusable spacecraft, at SpaceX headquarters in Hawthorne, California on October 10, 2019. (Philip Pacheco / AFP) Private companies like SpaceX are testing vehicles for manned space missions. We’ll peer out into the near future and next steps in human space exploration. Guests Ariel Ekblaw, founder and lead of MIT Media Lab’s Space Exploration Initiative. (@ariel\_ekblaw) Charles Bolden, NASA administrator from 2009-2017, and a former astronaut and Marine Corps general. (@cboldenjr) Interview Highlights American astronaut Christina Koch broke the record for the longest-ever space flight by a woman today. Where is human space exploration going next? Ariel Ekblaw: “It’s a huge milestone. Part of her story around the spacesuit, and the sizing of the spacesuits, and the all-female spacewalk is something that we pay a lot of attention to at our group at M.I.T. And then being able to be in space for that length of time provides an invaluable sense of knowledge of what is the human lived experience of space. “How might we better design for her comfort to delight her in space? To now, thanks to standing on the shoulders of groups like NASA and Charlie’s work, think about not just a survivalist mode for space exploration, but what are the artifacts, and the tools, and the experiences that we could design for Christine in the future? Given her experience of this 300-plus-day journey and stay to really delight her for her experience in space exploration. And in the future, scale that to space tourists and others besides astronauts.” On how close we are to regular space tourism Ariel Ekblaw: “I would say we’re both close — we’re dangerously close — and yet so far away. So companies like Blue Origin and Virgin Galactic are racing to be able to send some of the first space tourists into low Earth orbit on some of their crafts, in either this year, or upcoming years. With Axiom and the announcement from NASA about the first commercial space station to be attached to the International Space Station. “We’re beginning to build up that infrastructure that could support real space tourism. There are still, as I’m sure Charlie can also speak to, large unanswered questions about how do you prepare someone if not off the street — A space enthusiast — for the experience of space when they’re not necessarily going to have the same in-depth, extensive training as a NASA astronaut? How do we keep them safe? How do we handle mental health? How do we prepare them for both the excitement and the responsibility that they might have as a member of a crew in a resource constrained environment?” On whether people who aren’t trained as astronauts should be able to go into space Charles Bolden: “Yes, without a doubt. … They’ve got to have some training. But I would say it depends on what the flight is going to be. I haven’t had a chance to talk to Beth Moses from Virgin Galactic. But Beth would be — she’s not a normal person off the street, because she’s the astronaut training officer at Blue Origin. But Beth had an opportunity to fly, and she didn’t go through years of training. You know, I think there’s some fundamental things that you teach someone about mobility. And, ‘don’t touch that.’ And you let them go.” On whether it’s possible to go to Mars without commercial interest involved Ariel Ekblaw: “I think it’s critical to have both. As Charlie and Dava Newman — another colleague of mine — have shown: the path from moon to Mars is going to be a public-private partnership path. And we need the capability that private brings and the inspiration that NASA and that the governments can still bring to the task.” On what it’s like to go to space Charles Bolden: “It’s much more spectacular than the pictures portray. We have great cameras nowadays. They’re better and better than they ever were before, but they just cannot capture what the human eye sees. God’s camera is pretty awesome. The ability to play around with Newton’s law, the fact that, you know, because gravity is overcome by the speed at which you’re going around the planet allows us to seem like we’re floating. And that’s a lot of fun to get to play with. You know, a body at rest stays at rest, a body in motion stays in motion. And for every action, there’s an equal and opposite reaction. It makes all that stuff that you learned in middle school, if you learned it, or if you avoided it, it brings it to life for you. So that’s incredible.” From The Reading List Wall Street Journal: “Space Is Poised for Explosive Growth. Let’s Get It Right.” — “In the 19th century, urban planners wrangled the chaotic metropolises of Paris and New York into “planned cities,” turning warrens of streets into orderly grids, building sewage systems and transit lines, and allowing for new types of architecture, such as apartment buildings. Today, we face a similar inflection point in developing the nearest reaches of space. “The next decade is set to bring explosive commercial growth and more private industry players to low-earth orbit, the area spanning 100 to 1,240 miles above the planet’s surface. SpaceX has proposed a satellite-based internet, and Planet is growing its fleet of Earth-imaging satellites. NASA plans a transition towards commercial management of the international space station. Several startups are developing low-earth orbit advertisements—logos or other designs, visible in the night sky, made from tiny, reflective satellites. Entrepreneurs are making plans for space hotels. “Before we let rampant development go unchecked, we should consider how these efforts might conflict with or complement each other. We still have the chance to intentionally design humanity’s first ‘planned orbit.’” MIT Media Lab: “Democratizing Access to Space” — “The Space Exploration Initiative’s founding mission is to rigorously, vigorously build out the technologies of our sci-fi space future while keeping our innovations and team as open and accessible as possible. When we say we’re ‘democratizing access to space exploration,’ what do we mean? In the context of our blue sky goal — to realize an inclusive, impactful — we approach democratization in four core ways. We are: “1. Democratizing access by inviting and uniting new disciplines in our creative practice] “2. Democratizing access by designing space tools, products, and experiences for all of us, not just the pinnacle of human talent embodied by astronauts. “3. Democratizing access by developing hands-on, widely accessible opportunities to shape the technologies of our space future. “4. Democratizing access through the celebration of new narratives through which we can tell the story of Space Exploration, writ large.” The Verge: “This was the decade the commercial spaceflight industry leapt forward” — “Two years into the decade, on May 25th, 2012, a small teardrop-shaped capsule arrived at the International Space Station, packed with cargo and supplies for the crew living on board. Its resupply mission at the ISS wasn’t remarkable, but the vehicle itself was unique: it was a Dragon cargo capsule, owned and operated by a private company called SpaceX. “Before 2012, only vehicles operated by governments had ever visited the ISS. The Dragon was the first commercial vehicle to dock with the station. The milestone was a crowning achievement for the commercial industry, which has permanently altered the spaceflight sector over the last 10 years. “This decade, the space industry has seen a shift in the way it does business, with newer players looking to capitalize on different markets and more ambitious projects. The result has been an explosion of growth within the commercial sector. It’s allowing for easier access to space than ever before, with both positive and negative results. Such growth is providing the commercial space industry with lots of momentum coming into the 2020s, but it’s unclear if this pace is something that can be kept up.” Axios: “NASA’s murky commercial space future” — “NASA’s plans to create a robust economy in low-Earth orbit where private spaceflight companies can flourish could eventually leave the agency’s astronauts stranded on Earth with nowhere to go. “Why it matters: NASA hopes to play a lead role in developing a private spaceflight economy, including private sector astronauts. The agency sees this as a way to free it up to focus on farther afield goals like bringing humans back to the Moon and, eventually, to Mars.