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The New Space Age: Impact on Strategic Policy

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SYNOPSIS

A new space age has dawned, with the private sector playing a very public role with its disruptive space technology. Governments cannot overlook this novel development because of the strategic implications.

COMMENTARY

JEFF BEZOS and Richard Branson's recent trips to the edge of space has demonstrated the private sector's growing ability to make space travel safe and routine. But it is more than just space tourism. From hypersonic travel to satellite Internet, space is shaping up to be the next big play and that is why private industries from the United States to China are piling into that vast yet untapped market.

As with major technological revolutions in the past, one should fully expect some disruptions to happen in this new space age. Like it or not, novel space-based systems are going to disrupt the status quo. Moreover, some countries will be more vulnerable than others to the disruptive impact of these innovative technologies. So as the private sector reaches for the stars, these countries should start planning ahead if they hope to stay in the game.

Dawn of a New Space Age

The Space Race, which took place during the Cold War, saw the US and USSR competing to put the first man into space and on the Moon. Although the Soviets achieved several firsts in the race, it was the Americans who put the first man on the Moon in 1969.

What distinguishes the new space age from the Cold War race is that the private sector

is now playing a more prominent role. Because of their deep involvement, the private aerospace companies are also having a bigger say this time.

Superiority in space flight was the chief aim during the Cold War. Now, besides space tourism, the private sector is pushing into hypersonic travel and satellite Internet as well. For example, SpaceX – a privately-held firm based in California – has set its sights on bringing the Internet to remote parts of the world by launching as many as 40,000 Internet-relaying satellites into low-earth orbit. Founded by tech billionaire Elon Musk, SpaceX now has close to 1,300 satellites in operation and Starlink is already available to some 10,000 subscribers.

Meanwhile, Branson's aerospace company, Virgin Galactic, is working to make hypersonic travel a reality. Flying at many times the speed of sound, a reusable space-worthy craft not unlike the one used for Branson's suborbital trip can in theory fly from New York to Tokyo in under an hour.

The successful completion of that flight proves that the concept of safe and affordable hypersonic travel may not be as far-fetched as it seems. Indeed, as rocket technology becomes more reliable, and the cost of operation drops, hypersonic travel may in future be as banal as taking a commercial airline.

Strategic Implications of Novel Space Systems

Technically, Starlink can provide Internet coverage to almost every part of the world once all its satellites are deployed. Service, however, will only be available in countries that licensed SpaceX to do so and currently, they are mostly in the West. But SpaceX is eyeing customers in Asia as well as the market for inflight and maritime Internet services.

It is no secret too that Musk plans to use the revenue stream from Starlink to bankroll SpaceX's Mars missions. More importantly, because Starlink can scale up rapidly and efficiently, it will at some point be able to challenge the monopoly of traditional telcos.

While competition benefits consumers, one must remember that telcos are critical infrastructures and there will be security ramifications if these essential assets are replaced by SpaceX. For one, censorship is going to be tricky if SpaceX gets to decide the kind of information users have access to online.

Data security will also be an issue not least because sensitive information is sent over the Internet. Chances are, as satellite Internet technology matures, the strategic implications will only get more complex and important, particularly for countries with large, underserved populations.

Impact on Airline Industry

Meanwhile, hypersonic travel is expected to impact the airline industry with estimates indicating that reusable spacecrafts will start to eat into the business of long-haul airlines as early as 2030. By then, point-to-point high-speed travel via outer space could be open to many more passengers and not just the ultra-rich and famous.

While great news for space-keen travellers, hypersonic spacecrafts will inevitably compete with airlines offering long haul flights. Specifically, flights that are more than 10 hours are likely to be hit hardest. By extension, the airport hubs that serve them are going to be affected too.

Like how automation wiped out countless manufacturing jobs in the American Midwest, hypersonic travel could put many people in the airline industry out of work. It is not just the aviation industry that is going to be affected; related sectors including hospitality and retail will also feel the pain.

Such a disruptive scenario might not happen in the near future but given the considerable investment and brainpower involved, one probably should not bet against hypersonic travel taking off in the coming decades.

Strategic Policy for the New Space Age

A brilliant businessman by any measure, Bezos once said that Amazon is where it is today because of key decisions he made years ago. Indeed, long before cloud computing became a buzzword, the Amazon founder was wagering on the technology and because of that, Amazon now crushes the competition in cloud services. The point is to flourish; long-term strategic thinking is absolutely essential.

If disrupted countries want to survive and thrive in the new space age, then they should plan ahead now. Better not wait for novel space-based technology to take off first before taking action because by then, it may be too late. Even if the disruption never actually come to pass, all that hard work put into preparing for it should rightly yield fresh ideas for development too.

That said, the electoral cycle can make it difficult for governments to plan for the long haul. Obviously, the answer is not to do away with elections. Rather, it may involve strengthening fundamental institutions like the civil service and schools since they form part of the intellectual framework crucial for the long game of getting ahead in the new space age.

After all, there will be opportunities too, particularly in the suborbital space and being prepared with thoughtful policies and smart people in place is probably the best way to seize them.

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