Centre for Air Power Studies

ANTRIX CORPORATION: CAN IT PROVIDE IMPETUS TO INDIAN SPACE MARKET

Wg Cdr PA Patil,
Research Fellow, CAPS

Antrix Corporation Limited, the commercial arm of Department of Space was established in the year 1992 as a private limited company under the aegis of government of India. The name 'Antrix' is derived from the local dialect 'Antariksh' which means space. The corporation is responsible to promote the commercial space projects and services of Indian Space Research Organisation (ISRO). It also acts as a consultant firm for international space ventures and works out the protocols for transfer of technology. With fully equipped state-of-the-art facilities, Antrix provides end-to-end solution for many of the space products, ranging from supply of hardware and software including simple subsystems to a complex spacecraft. The services include variety of applications covering communications, earth observation, scientific missions; space related services including remote sensing data service, Transponders lease service; Launch services through the operational launch vehicles (PSLV and GSLV); Mission support services; and a host of consultancy and training services.

Committed to exploit the space market and to publicize ISRO as a major commercial space player, Antrix has generated Rs 4,408 crore by rendering myriad services to varied clientele since 1992[1]. Compared to the exponential growth of international space market, this revenue generated over past two decades is way too short in comparison to revenues generated by global satellite manufacturers and launch service providers. The space market has a huge potential in the field of Satellite Communication, Ground Control systems, Navigation, communication Satellites, launch services, space insurance services,

space tourism, remote sensing satellites and applications. As per the "State of the Satellite Industry"[2] report prepared by Tauri group, the industry has witnessed a growth of 35 percent over the last five years and with more countries opting for satellite services, the industry is bound to grow. The breakdown of global revenue in terms of satellite services, satellite manufacturing, launch services and ground equipment is appended below in Table 1. While the satellite services, manufacturing and ground equipment sectors have witnessed growth, the launch industry segment revenue decreased in spite of higher number of launches. This could be attributed to reduced tonnage involving experimental satellites and lowering of launch costs in a competitive market.

Global revenues	1998[3]	2001[4]	2008	2009	2010	2011	2012	2013
Satellite Services	24.4	46.5	84.1	92.8	99.2	107.8	113.5	118.6
Satellite Manufacturing	12.4	9.5	10.5	13.4	10.7	11.9	14.6	15.7
Satellite Launch Industry	4.3	3.0	3.9	4.5	4.4	4.8	5.8	5.4
Satellite Ground Equipment	13.9	19.6	46	49.9	51.6	52.9	54.9	55.5
Total Satellite Industry revenue	**55.0**	**78.6**	**144.4**	**160.8**	**168**	**177.4**	**188.8**	**195.2**

Table 1: Global Satellite Industry revenues ($ billions)[5]

As is evident from the table above, the global satellite industry has grown steadily and revenues have increased consistently every year. The sub segments of satellite industry have shown a consistent growth rate and space industry is likely to boom further particularly in the communications sector. In terms of numbers, a total of 197 satellites were launched in year 2013 of which more than half the number comprised of small and microsatellites weighing below 91 Kilograms[6]. These smaller categories of satellites have a bright future in space industry and are planned to be part of larger constellations for varied services. Euroconsult's "Satellites to be built and Launched"[7] estimates that by the year 2020, approximately 1,145 satellites will be built[8]. This is 51 percent more over previous

decade and is expected to give the much expected push to the flourishing satellite industry. With this kind of substantial growth in the offing, and advancement in space technology and capabilities, the commercial services have become part and parcel of clientele all across the globe. The worldwide use of satellite services coupled with the advances in Information technology has forced almost all the countries to augment their space infrastructure in support of societal and economic foundation.

ARTICLES BY SAME AUTHOR

INDO-ISRAEL COLLABORATION FOR INTEGRATED ANTI-MISSILE SYSTEM

RIPE TIME FOR INDIA TO EXPLOIT INTERNATIONAL SPACE MARKET

As the international space market is upbeat, and with India considered amongst the top five space faring nations, one needs to analyse intricately the dismal performance of Indian space industry in the global scenario. A generalized opinion is that India lacks the will and commitment to exploit the international space market. This is true in one sense as hardly any Indian company has created footprints in international space market. Lack of initiative in Indian commercial space sector is blamed on the government, citing absence of long term perspective plan and policy framework. However, one need to understand that Indian government itself was constrained in providing the much needed direction to domestic industries with looming uncertainties and technological compulsions to meet international demands. The matter got complicated with imposition of sanctions post nuclear test in 1998 delaying the advanced projects planned by ISRO. However, ISRO did turn around the tide in its favour with indigenous developments keeping in line with Dr. Vikram Sarabhai's vision of space technology being used for solving of problems faced by man and society and by not pursuing design for aggressive use of space. Compared to the major space faring nations, it would be fair to appreciate that ISRO has just about started to make its presence felt in the international space market with its reliable service and support. ISRO has enhanced its credit standing in the international space market with successful launch of its rocket Geosynchronous Satellite Launch Vehicle - Development 5 (GSLV-D5) in January 2014

using long awaited indigenously built cryogenic engine. Another milestone being closely monitored by the space community is India's ambitious Mars orbiter spacecraft which has completed about 80 per cent of its journey[9] for its rendezvous with the planet scheduled for September 24, 2014. ISRO's Chandrayan-1 has been lauded the world over for discovering evidence of water on moon.

The Indian government is well aware of the booming space industry, and its space programme is consistently progressing in the right direction. This can be gauged from the major boost the Indian space programme received in the union budget presented in July 2014 where Rs. 6000 Crore has been earmarked for ISRO. This makes a substantial jump of 50% over the revised allocation of Rs. 4000 Crore[10] in the budget 2013-14. In the current financial year, the budget caters for heavy capacity launch of GSLV Mk-III, launch of PSLV and future space missions for exploration of moon and Mars.

ISRO has gained a respectable reputation in international space market owing largely to an unblemished track record in recent years. The success of ISRO's indigenous GSLV series will be watched closely over the next few years and with a few more successful launches, Antrix would be in a position to secure international contracts for high tonnage satellites with lucrative low cost solutions. The Indian government is looking forward to enhanced business which calls for augmenting the infrastructure. As ISRO is expected to continue with its research and development with Antrix being its marketing arm, the mass production facilities would necessitate a higher share of responsibilities to budding private space industries. The government must take steps to attract small, medium and large companies in this direction by lucrative proposals and provision of subsidies. The other area of concern is the constraint posed by the launch facilities and associated infrastructure. Each rocket launch requires a considerable lead time spread over a few months. Presently ISRO carries out rocket launches using two launch pads at Satish Dhawan Space Centre, Sriharikota (SDSC SHAR). As Antrix Corporation is expected to secure more international contracts once the GSLV establishes itself, the need of the hour is to minimize the turnaround time for rocket launch which demands setting up of new rocket launch pads.

With India poised to become a global player in supplying advanced technology in space systems, the Department of Space needs to adapt a strategy that would encourage ISRO's futuristic space projects and expand the manufacturing sector with increased private partnership enabling Antrix to capture a share of flourishing space market.

(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])

End Notes

[1] Discussion in parliament, "Antrix has earned Rs 4,408 crore since 1992: Govt", accessed on July 21, 2014 at http://zeenews.india.com/news/space/antrix-has-earned-rs-4-408-crore-since-1992-govt_948159.html

[2] State of the Satellite Industry Report - May 2014 prepared by Tauri group for Satellite Industry Association accessed on Jul 21 from http://www.sia.org/wp-content/uploads/2014/05/SIA_2014_SSIR.pdf

[3] "State of The Satellite Industry" Report- June 2005 prepared by Futron Corporation accessed on 24 Jul 2014 at http://www.sia.org/wp-content/uploads/2010/11/2005_SSIR_Final.pdf

[4] ibid

[5] Compiled from State of the Satellite Industry Report - May 2014 prepared by Tauri group for Satellite Industry Association accessed on Jul 21 from http://www.sia.org/wp-content/uploads/2014/05/SIA_2014_SSIR.pdf

[6] "The Space Report 2014- overview", Space foundation, accessed on Jul 23, 2014 at http://www.spacefoundation.org/programs/research-and-analysis/space-report

[7] Satellite Industry Growth To Continue Despite Challenging Environment; accessed on 30 Dec 13 from http://www.spacedaily.com/reports/Satellite_Industry_Growth_To_Continue_Despite_Challenging_Environment_999.html

[8] ibid

[9] "Mars orbiter completes about 80 per cent of journey", Accessed on Jul 22, 2014 at http://zeenews.india.com/news/space/mars-orbiter-completes-about-80-per-cent-of-journey_949205.html

[10] http://www.newsnation.in/article/49338-at-rs-6000-crore-modi-govt-grants-50-cent-jump-isro-budget.html accessed on July 21, 2014