Comparative Analysis on the Legal Framework of the Privatization of Space Transportation

By Seiko MORIKAWA

Program Management and Integration Department, Space Transportation Mission Directorate, Japan Aerospace Exploration Agency (JAXA), Tsukuba, Japan

(Received June 21st, 2011)

In Japan, its main launcher, H-IIA, was privatized in 2005 and is now operated by the Mitsubishi Heavy Industry, and this was an important turning point for all of the space industries, government and space agency (JAXA) in Japan. However in Europe, the Ariane rocket series have been operated by private company, Arianespace, for more than a few decades and now Arianespace has the largest share in the space transportation market in the world. Based on this situation, this paper is to compare and analyze the form and legal framework of the privatization of space transportation, especially focusing on the difference between Europe and Japan.

Key Words: Space Transportation, Privatization, H-IIA

1. Introduction

In 2002, the Council for Science and Technology Policy (CSTP) and Space Activities Commission (SAC) of the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) decided and expressed the policy to privatize the Japanese main launcher, H-IIA. CSTP is the council to discuss the policy of science and technology in Japan and “is established within the Cabinet Office in January 2001, the command center for Japan’s integrated efforts to advance science and technology (S&T) in a comprehensive and well-planned manner”. For this policy, the special team was set up to discuss on the privatization of H-IIA, and the team issued the final report in 2003. Following this report, the National Space Development Agency of Japan (NASDA, succeeded by Japan Aerospace Exploration Agency (JAXA) in 2003) decided to transfer the technology to the private sector and designated the Mitsubishi Heavy Industries (MHI) as the prime contractor for the H-IIA launch service. Through this process, Japan chose to privatize the launch service by contract. All the condition of the privatization is stipulated in the contract between JAXA and MHI. On the other hand, in Europe, another method of privatization is applied to the privatization of their launcher, Ariane, which is by the investment and shareholding by French Space Agency (CNES) and other space related entities.

In this paper, I will first look over the legal framework of privatization of space transportation comparing the framework in Japan and Europe. Then the analysis will be made on each framework and the likely consequence of each Japanese and European framework of privatization.

2. Framework of the Privatization

2.1. Framework in Japan

The policy to privatize the Japanese main launcher, H-IIA, was decided by CSTP headed by Prime Minister Junichiro Koizumi in June 2002. A week after the CSTP’s decision, SAC, which was to discuss the activity plan of NASDA, also presented the policy to privatize the H-IIA. Concerning these decisions, both CSTP and SAC stated the H-IIA standard type launch vehicle as a key Japanese launch vehicle with priority use. This decision to privatize the H-IIA was based on the policy of Koizumi administration at that time to put in the hands of the private sector whatever could be done by the private sector.

Following the decisions made by both CSTP and SAC, MEXT set up the special team to discuss the methodology of the privatization, then JAXA, implementing agency for the development and operation of the H-IIA, started the procedure to select the prime contractor for the privatization of H-IIA standard type launch vehicle on October 23, 2002. After several weeks of selection, MHI was selected as a prime contractor for the privatization and this result of the selection procedure was reported and made public at the SAC held on November 20, 2002.

To implement this decision, JAXA and MHI signed so-called Fundamental Agreement which state the basic framework of the privatization in February 2003. Then JAXA and MHI signed the technology transfer agreement in September 2003. By those agreements, MHI was able to commence the business operations of H-IIA launch service. However, due to the failure of H-IIA Flight No. 6 in November 2003, only two months after signing the technology transfer agreement, the process of the technology transfer and privatization was revised. Although MHI had been supposed to fully commit to the privatization, including manufacturing and operation right after the agreement, the gradual transfer approach was introduced after the failure, and the finalization of the transfer was finished in March 2007, followed by the first privatized mission carrying JAXA satellite “SELENE(Kaguya)” on board in September 2007.
has taken the contract-based approach between JAXA and MHI, and this framework is in line with the report of the special team of MEXT as well as the policy to designate the prime contractor and the priority use of H-IIA.

2.2. Framework in Europe

The privatization of the space transportation in Europe began more than 30 years ago. In 1980, the launch service provider, Arianespace, was jointly established by the French space agency (Centre Nationale d’Etude Spatiales, CNES) and the European space industrial firms. Its main shareholder has been CNES and now the composition of the major shareholders is; CNES 34%, Astrium 30% and SAFRAN 10%. In contrast to Japanese framework, Europe has chose the capital-based approach for the privatization of the space transportation.

The development of Ariane rocket was strongly supported by the French political vision which “was already aware of the long term strategic stakes of the space technologies and convinced that an independent access to space with a launch site (KOUROU) and a launcher (ARIANE) was an essential goal to be achieved”. Then at the production and operational phase, the Ariane Program Board was concerned that “the program organization, …was unable to meet the operational and commercial requirements of the operational phase”. It was because “the main difficulty was to commit sizeable amounts of money to produce launchers without firm commitments from users, particularly as it was necessary to commit the production by batch, and to be able to answer quickly in front of users new requests.”

Considering this concern, the foundation of Arianespace was studied among the related parties in Europe and finally came to conclusion that to create a company was “the proper way to proceed”. Now Arianespace has the largest share in the satellite launching market in the world and, though there is an argument that even European alternative has some difficulties, it has proven to a certain extent that initial idea was in the right direction.

3. Analysis on the Framework of Privatization

3.1. Analysis on the framework in Japan

As mentioned in 2.1, the Japanese framework is based on the contract (technology transfer contract) between JAXA and MHI. MHI is a manufacturing industry and responsible for all the process of manufacturing and operation of H-IIA. This is the basic idea of the privatization in Japan as stated in the report of the special team of MEXT. Since the first privatized mission was successfully launched in 2007, H-IIA has continued 6 consecutive success until April 2011, and it may be regarded as the achievement where the prime manufacturer is responsible for throughout the process.

On the other hand, this framework implies that the operation of the space transportation business is in a hand of the private sector which is fully owned by private capitals. As the debate of the corporate governance is emerged in the stakeholder to the company and also in the society as a whole, the importance of the monitoring and the accountability to the stakeholders is more and more emphasized. Consequently, the directors of the company now has grave responsibilities, and in the worst case, the single mishap may lead to the removal of the director or, even worse, the derivative suit by the shareholders. This may lead to the overresponse of the directors and to shrink their activities and the business judgment.

For example, in Japan, the Companies Act (Act No. 86 of 2005) states that the board of directors shall supervise the execution of duties by directors (Article 362, Paragraph 2, Item 2), and the directors neglect their duties, they shall be liable to the damages arising thereof to the company. This could mean that the directors become more hesitant to make or even agree to the risky business in the board of directors, as they might be theoretically accused and sued by the shareholders if the attempt fails. The space transportation is still “a risky business”, and supposedly no major launcher has manage to achieve and continue 100% success rate. It is too demanding for fully private-owned, listed and public company to bear all the risk by itself.

Another point is that when the technology transfer contract period come to the end and the private sector decides not to extend the contract, the privatization framework cannot be sustained. The private company has to make the profit assuming the understanding of the shareholders. If it does not make sufficient profit, the director may choose to back down from the business. Fortunately, the current situation is not as severe, but as I mentioned above, only one mishap may end up with this consequence and this can be said the limit of the contract-based framework in Japan.

3.2. Analysis on the framework in Europe

European framework is capital-based and the related entities invest in Arianespace, the launch service provider. This approach is quite different from Japanese approach. The advantage of this approach is that as the company is founded with the objective to provide the launch service to the customer, the company will not refuse to continue the launch business and does not have to care of the renewal of the contract. Furthermore, CNES, the governmental space agency, can take control over Arianespace commensurately with the amount of share.

The other point is that the shareholders are limited to the CNES and the European industries related to space business. This makes the directors much easier to gain the understanding of the shareholders comparing to explain the specialty of space transportation business to the shareholders having no background of space field.

4. Comparison Summary

Japan and Europe have chosen the different approach for the privatization. Japan did not choose the option of subsidiary or investment because that under current law, JAXA is not able to invest the capital to the private company or establish subsidiary company. There was not much choice but to transfer the technology by contract.

Another reason is that the consequence of Rocket System Corporation (RSC) in the 1990’s through to the 2000’s makes the policy maker reluctant to take the option. RSC was established by the 73 space related entities in 1990 aiming to provide the launch service using the rockets developed by
NASDA\textsuperscript{21}. RSC at the beginning was expected to be the Japanese launch service provider. However due to the delay in the development of H-IIA after two failures of H-II and the fierce competition in the satellite launch market, RSC finally chose to close its business in March 2006\textsuperscript{22}. This consequence still remains in the Japanese space sector, which may make hesitant to take the option.

To compare the framework of the privatization in Japan and Europe in the view point of directors taking the numbers of duties set in the law, the European framework may be preferable, because there is less possibility of derivative suit. In addition, it may be easier to achieve the accountability with the shareholders who are from the space sector in the same geographical region. Still there are the difficulties reported in the media that Arianespace is now seeking for the aid to the geographical region. Still there are the difficulties reported in the shareholders who are from the space sector in the same region. In addition, it may be easier to achieve the accountability with the shareholders who are from the space sector in the same geographical region. Still there are the difficulties reported in the media that Arianespace is now seeking for the aid to the share of this region.

Looking back to the situation in Japan, things are a little more complicated. In the managerial point of view, the directors may be more risk averse under Japanese framework, because as explained in 3.1., the current framework forces the directors to take the responsibilities arising from the duties set in the Companies Act in the field of risky space transportation. It might result in that the director has to make compensation to the company as a result of the derivative suit from the unsatisfied shareholder for a mishap. Taking these points into account, it is quite possible that the director may someday think the burden is too heavy for the private sectors to take, which is likely to end up with the expiration of the contract itself and also the contract-based privatization.

5. Conclusion

In this paper, I briefly look through the Japanese and European framework of the privatization in the field of space transportation. Both framework have the background, and it is hard to say which framework is better readily, but it is for sure that the space transportation has to comply with the rules and systems of the market. Therefore to create the framework to fit in to the rules and system of the market is significant and it has to be carefully designed. For this aspect, I would like to continue the study on this issue and hopefully conclude with the concrete view.

Acknowledgments

This study is supported by JSPS KAKENHI(Grant-in-Aid for Scientific Research, No.23912008).

Note: This paper is written in author’s personal capacity and the views expressed do not necessarily represent the views of JAXA. Any errors and omissions are attributable solely to the author.

References

6) CSTP, op.cit., Ref 3, pp5-6.
8) JAXA, op. sit., Ref 7.
10) JAXA.: op.cit., Ref 9, pp11.
16) d’Allest.: op.cit., Ref 15, pp49.
17) d’Allest.: op.cit., Ref 15, pp49.
18) d’Allest.: op.cit., Ref 15, pp50.
19) MEXT.: op. cit., Ref 2.