

Interview with Takeshi Kawakami, President of IHI Infrastructure Systems Co., Ltd.

Building Izmit Bay Crossing Suspension Bridge in Turkey — a Project by IHI Infrastructure Systems Co., Ltd.

By Japan SPOTLIGHT

Turkey is a country in need of social infrastructures to achieve strong economic growth. An efficient transportation system will be necessary to save costs and time in business activities. This is particularly true of countries rapidly reaching the stage of developed nations.

IHI Infrastructure Systems Co., Ltd., a Japanese company creating and exporting infrastructure and affiliated to heavy-machinery maker IHI Corporation, has been working on many social infrastructure projects in Turkey, Vietnam and other countries, as well as in Japan, since its foundation in 2009 as a result of the merger of the three bridges and sluice gates makers Kurimoto Co., Ltd., Matsuo Bridge Co., Ltd. and IHI Corporation's bridge and sluice gate building sector. It has been specializing in building bridges, dams and offshore structures. One recent contribution to global infrastructure is Osman Gazi Bridge (Izmit Bay Crossing Bridge) in Turkey, the longest suspension bridge in the country, which opened in 2016. We interviewed Takeshi Kawakami, president of IHI Infrastructure Systems Co., Ltd. who has been working on bridge projects for a long time since joining the company and lived in Turkey for five and a half years as a project manager of this longest-bridge project.

(Interviewed on Sept. 11, 2017)

Introduction

JS: Could you tell us about IHI Infrastructure Systems' history of exporting, as well as about your own career?

Kawakami: IHI group grew out of Ishikawajima Shipbuilding Factory, founded in 1853. They built the first steel bridge in Japan in 1883 as a private company. Seventy years later in 1954, they built Badomutani Bridge in Thailand, their first overseas project. In 1969, they worked on expanding the deck of the Auckland Harbour Bridge in New Zealand, which was their first large-scale overseas project.

Our company, IHI Infrastructure Systems founded in 2009, having been integrated among the three bridge and sluice gate makers, has been working on engineering and construction of bridges and sluice gates. I joined IHI Corporation in 1989 and have been working on engineering, construction and production process management for bridge structures. I lived in Turkey recently for five and a half years and worked as a project manager on construction of



Takeshi Kawakami, President of IHI Infrastructure Systems Co., Ltd.

Osman Gazi Bridge, the longest bridge in Turkey, completed in 2016.

In Japan, in most cases, we work on construction of steel superstructure, while a substructure is separated from bridge construction. However, in Europe and the United States in most cases, constructing both superstructure and substructure as a whole is commissioned to a company. Osman Gazi Bridge was also one in which both superstructure and substructure were dealt with only by our company. We undertook it as an engineering, procurement and construction (EPC) operation, with an estimated cost of around \$1.1 billion.

IHI group has worked on many projects in Turkey so far. We have the largest number of overseas projects there. In particular, since 45 years ago we have been working on bridge construction projects in Turkey. The first one was Golden Horn Bridge over Golden Horn

linking the Old City and the New City of Istanbul, the largest city in Turkey, completed in 1974. In 1988, we completed the second Bosphorus Bridge. Then we engaged in construction of New Golden Horn Bridge as well as seismic reinforcement and retrofit work for 17

large bridges in Istanbul including two suspension bridges over the Bosphorus Strait. Most of these projects were financed by Official Development Assistance (ODA).

JS: Do you have any particular reason for having many projects in Turkey?

Kawakami: I think it is because we have built a good business relationship with Turkey's General Directorate of Highways (KGM in Turkish) as well as our partners in our 45-year history of construction business there. Another reason could be that Turkish people like Japan so much and thus our working environment was so enjoyable. Though unfortunately there have recently been some terrorist attacks and a military coup, I have a very positive impression about Turkey as a nation where we can live very comfortably.

JS: Your company has strength in bridge and sluice gate construction. Is it because your parent company IHI Corporation was started as a shipbuilding company?

Kawakami: No. Some 160 years have passed now since the foundation of IHI Corporation. They were originally constructing bridges, dams and river gates as structures on land, besides shipbuilding. They were engaged in the infrastructure-building business in the very early days of Japan's modernization.

I believe our strength in overseas business development in the domain of bridges lies in engineering and construction. This is a strength common to all Japanese infrastructure-building companies. While in the rest of the world, in many cases, general contractors manage the whole project and consultants are in charge of design, our company proceeds with projects based on a blueprint reflecting our own construction plan. This blueprint was made by our designers and consultants, and is the outcome of close consultation with us, so we are able to carry out the project exactly as planned. We also go to our client country with our construction experts and directly employ local workers. This is our way to carry out overseas projects and I believe this helps to distinguish us from other countries' general contractors who employ their subcontractors' employees, which could make it difficult to manage the whole construction project coherently.

We can also get the benefits of enhancing our technological capacity in these overseas projects due to the diverse natural conditions surrounding them. These merits could be enormous in the long run.

Osman Gazi Bridge

JS: Osman Gazi Bridge, the longest suspension bridge in Turkey, was opened on July 1, 2016. How long did it take for its completion? How was the contract concluded?

Kawakami: There was a plan of construction of this bridge in the air already in 1994. Though there was international bidding for this project on a build, operate and transfer (BOT) basis in 1997 and a Turkish company, a UK and Italian companies and IHI Corporation won the contract in this bidding, the project was stopped by the Kocaeli Earthquake around Izmit Bay in 1999.

The international bidding was done again in 2008, and then the project was expanded and contained not only a bridge but also a 420-kilometer-long road. Then we thought we could not do it on a BOT basis and gave up the idea of participating in the bidding on a BOT basis but decided to undertake only part of the plan, which was construction of a bridge on an EPC basis from a Turkish and an Italian company who won the bidding of the total project. We won the competition against the Chinese company group and the Korean company group in the bidding on an EPC basis in 2009 and got the contract in 2011. We started construction earnestly in 2013 and 42 months later the bridge was opened to traffic. We completed it in the shortest period among all the other long suspension bridges that were constructed by us, from the start of construction until traffic opening. Akashi Strait Bridge, which opened in 1998, is 3,911 meters long, but took more than 10 years from the start of construction until opening. Even a smaller one took at least four years for completion.

JS: You had hard competition in the international bidding?

Kawakami: Yes, it was truly hard. In particular, a Chinese company always lowers the estimated cost, which we cannot compete with. However, while there are some clients who would choose the cheapest contractor, there are some who would make a final decision based on a more comprehensive assessment of the level of technology, the quality of the product and the construction period. In the case of the Osman Gazi Bridge Project, our client was a private company that is composed of six general contractors and knew about us, and the Turkish government and Highway Administration also had a high opinion of our competency.

A Korean competitor was collaborating with the Korean government and proposed a plan including a financial plan with government support. To compete against them, we worked with METI of the

Japanese government and found a solution to cope with it.

JS: You undertook this project on an EPC basis responsible for all the work, but the global standard would be to share the responsibility among different entities.

Kawakami: Yes. In our case as well, most of our overseas bridge-constructing projects in the past have been undertaken as ODA projects, meaning undertaking them as a joint venture with general contractors while an independent consultant works on design and engineering in advance. Osman Gazi Bridge was an exception. In general, given that ODA projects take a long time for preparation due mainly to the diplomatic process in reaching agreement on financial conditions, we would plan to increase work in Europe and the United States, or in Turkey where we can partner with US, European, and Turkish general contractors.

JS: I think those who badly need social infrastructures like bridges or roads will be the countries undergoing rapid urbanization. So does that mean there will be more cases to be financed by private funds rather than ODA?

Kawakami: Yes. In Turkey as well the last ODA project was a seismic reinforcement work in 2010, and there will be no ODA projects thereafter. However, since any country today can suffer from budgetary difficulties, in many cases we will have to pursue projects under public and private partnerships.

JS: What about the challenges involved in the Osman Gazi Bridge project?

Kawakami: We had workers with experience of an overseas project, but it was the first time for us to undertake an international construction project on a BOT basis as a Special Purpose Company (SPC). The most difficult part of the work was process management. At the beginning of the project, a consultant who supported our client did not let us start construction. However, including this challenge, we experienced lots of negotiations with the companies involved from different countries, both before and after construction. We eventually managed to adjust our work to changing circumstances resulting from these negotiations and somehow we were able to shorten the construction period. Unfortunately, at the last stage, we had an unexpected accident during the construction of a catwalk and the whole construction was delayed. We believe we had done a perfect quality control of the bridge structure itself, but it

was not the case with the temporary structures. Although we ordered these temporary structures in advance in accordance with our original plan, as construction proceeded there became a shortage of materials for these structures due to the change of the structure and we could not help but order additional ones from the market, which meant we could not always guarantee their quality. This will be reflected in any improvements in our future work.

Developing Infrastructure in Turkey for Sustainable Growth

JS: Having worked and lived in Turkey for a long time, you must like Turkish people and find it comfortable to work with them. But are there still cultural conflicts between Japanese and Turkish?

Kawakami: Yes, but such conflicts could happen anywhere in the world. When I was working on a project in Turkey, more than 1,000 Turkish people were working on site including more than 300 Turkish employees of our company. We did our best to keep our commitment to our Turkish colleagues and clients in order to win their trust. Our Turkish employees truly did a good job and worked hard like Japanese. However, they told me it would be very tough to continue to work like Japanese on a construction site. They hesitated to work at a high place 250 meters on top of a tower, since it was unusual to work at such a height in Turkey. We hired 100 domestic workers for cable erection in a high place, but many of them quit. Then we needed to employ 200 or 300 more workers. It was anyhow difficult for us to keep them working for a longer period. On a construction site, all the workers worked day and night. It was a challenge for us to keep them working for such long hours every day. I am, however, grateful to those Turkish workers who were diligent and interested in their job.

JS: How many Japanese were working on the construction site?

Kawakami: There were about 40 to 50 Japanese, including engineers, when we were constructing part of the substructure, and then when we were building the superstructure of the bridge in a local factory there were around 150 Japanese at maximum and on average about 100 Japanese were stationed there.

JS: Do you think the infrastructures like bridges your company has built so far in Turkey are truly instrumental in promoting their economy?

Photo: IHI Infrastructure Systems Co., Ltd.



Osman Gazi Bridge (Izmit Bay Crossing Bridge) in Turkey, the longest suspension bridge in the country, which opened in 2016.

Kawakami: Yes, I really think so. There are now more than 200,000 vehicles per day passing over the second Bosphorus Bridge, and with Osman Gazi Bridge we can go over the bridge in only six minutes by car, while it used to take an hour without the bridge to go the same distance. The bridges offer a totally different view of the city and there are many tourists also coming to visit the bridges to have such a new view. We are proud to see our projects having such a big visible impact on the host country.

JS: The country risk of Turkey seems to be increasing after terrorist attacks and a military coup.

Kawakami: When I started my job in Turkey six years ago, the country was full of vitality and amusement and there were many tourists there. Unfortunately, after the social unrest following terrorist attacks, tourists declined significantly and Japanese residents there also decreased. In our neighborhood, there was a suicide bombing and after that we went into town less frequently. In particular, some of our Japanese staff were living with their families and for their security we urged all of them to observe our

instructions strictly. Though our construction site was far from the city where terrorist attacks occasionally happened, there were some staff with families living in Istanbul. So we had to be very careful about their security as well.

When the military coup happened in 2016, I was moving to the airport and we got stuck between gunfire to our front and a tank coming from behind. I felt that I was living in the midst of an historical turning point. Though I sensed a crisis then, since I was living among Turkish people, I did not think I was in extreme danger.

JS: What do you think about the Turkish government's response to your company's bridge structure operations so far?

Kawakami: Turkish President Recep Tayyip Erdogan came to the deck closure ceremony and the opening ceremony for Osman Gazi Bridge. He was with us in a commemorative photo and showed his gratitude in speaking with us. Even during construction, the president and ministers visited our site on the important occasions, such as sinking the caissons of the towers into the sea and deck

closure for promotion of the bridge to the public. Since we could not change the schedule on days when important people visited our site, we had to proceed with the project as a baseline schedule. Their visits to our site thus worked to push us to observe our baseline schedule. Those important visitors as well as the KGM were so happy to see the project was under progress as scheduled.

At the final stage, unfortunately, as I said, we had a delay in construction due to an unexpected accident. They told us that it was regrettable, but I believe that proceeding with the project and completing it in spite of this accident further consolidated their trust in us and they consistently showed their gratitude for the completion of the bridge.

Looking Ahead

JS: How do you see your company's future?

Kawakami: We are considered in the world as a general contractor building up from the base to the superstructure of bridges, dams and river gates, while we are considered in Japan a fabricator of bridges, dams and river gates. As a general contractor, we see a big global market worth trillions of yen. Even without the market in China, we would have a global market of around 50 trillion yen per year. There would be many orders for big projects worth 200-300 billion yen received only by our company in Europe and the US, though in ODA projects there would be only 100 billion yen per year for bridge construction. In the domestic market, 200 billion yen would be the amount of money earned by new bridge construction per year. We would be able to earn such amounts in two or three big overseas projects. Thus our market will be very huge.

Of course, we consider ODA projects as important as ever. In Asia, Vietnam, Laos, Myanmar, India and Bangladesh would be promising clients for us. Africa could be a potential market, but development there is slower than in Europe or Asia, so I think this would be the third priority following Europe and the US, and Asia.

JS: Japanese seismic technology seems to have a good reputation. Will this attract many overseas clients to your company?

Kawakami: Yes, certainly. However, in reality, Japanese seismic reinforcement designs are different from those in Europe and we cannot apply our technology directly to the structures in overseas projects. While Japanese are constructing a rigid type substructure for seismic technology, the Europeans are producing slender and flexible structures for seismic isolation. I believe our Japanese technology would be more effective than European, but it is not an

economical way. It is very important to improve the accuracy of the main structure to have the function of resistance to earthquakes.

JS: Generally, what do you think of Japan's capacity for exporting infrastructures?

Kawakami: Since the Dubai debt crisis in 2009, when global stock prices fell triggered by the UAE's announcement of its debt problem, there seems to have been fewer opportunities for large Japanese general contractors to promote overseas projects. They have also been busy working on Japanese domestic projects following the need to revive the Tohoku regional economy severely damaged by the Great East Japan Disaster in 2011 and also to prepare for the Tokyo Olympics and Paralympics in 2020, and they cannot afford to provide their engineers for overseas projects.

In addition, though we have big overseas projects like high-speed railway construction in India, there are not so many companies keen on such projects in India. There are quite a few cases where construction is not making good progress overseas. It would be very difficult for private companies to take all the risk of construction being delayed. We will need the government's support to encourage them.

On the Japanese private business side, we will need to master international business practices to achieve more success in completing overseas projects. Business contracts are considered a key in global business and we need to adjust ourselves to contract-driven business customs, which is the global standard. Otherwise we will not be able to expand our infrastructure business worldwide.

Above all, we cannot beat the global competition only with high quality products, which most Japanese businessmen believe to be the merit of Japanese goods. It is often said that Japanese are always trying to produce only the highest quality goods like "Lexus" or "Ferrari" even on occasions where much lower quality goods like popular cars are needed. We need to reflect on this since there must be a way of producing goods that are appropriate to the budget and a host country's standard of living. On the other hand, Japanese business customs such as shortening the construction period and reduction of life cycle costs are highly valued by our overseas customers. Such things, or the quality of a product, could help distinguish a Japanese company from those of other countries, and we need to maintain this.

JS

Written with the cooperation of Naoko Sakai who is a freelance writer.