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P T Apora Indusma
Indonesia

An Experience of Holding IPR in a Market with Fierce Competition

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The case was developed with the cooperation of PT Apora Indusma solely for educational purposes as a contribution to the project entitled "IPR Strategies for Emerging Enterprises — Capacity Building for Successful Entry to Global Supply Chain," conducted under the auspices of the Asia-Pacific Economic Cooperation (APEC). The case is neither designed nor intended to illustrate the correct or incorrect management of the situation or issues contained in the case.

It was the first month of the year 2010, and Mr Martono Gunawan (also called Kuku) was feeling grateful that under his leadership the company, Apora, which he established way back in 1983 had weathered many ups and downs and had grown significantly. From a garage class machining shop in the downtown area it had developed into a modern manufacturing company situated in a large industrial complex.

Kuku was wondering why his company could not win its fight for more business against its competitors, more especially in the domestic market, in spite of its track record in delivering space-frame projects to more than 24 economies across the world and its IP patents rights on his Bottle Connector System.

By acquiring the patent rights, Apora expected to attract more customers, command a price premium, drive sales volume, enable clear product differentiation and positioning, and hopefully reduce marketing cost. As it turned out, these did not happen as expected; Apora still faced a lot of challenges just to win more business against competitors who did not even hold any patent rights.

Company Background

In mid-1983, Kuku transformed a small machining shop he inherited from his late father into a more modern company and named it Apora. As a trained civil engineer with a passion for steel works, he dreamed of building a world class steel space frame that would not only last for decades but would also provide strong protection against earthquakes, flood and the like.

Assisted by the DUC (Dutch United Consultants), Kuku started to research on space frame component manufacturing. Within six years or in 1989, the company was able to export its products to other ASEAN economies.

In 1995 Apora invented a new system called “Apora Bottle Connector System” that was patented in China, Chinese Taipei, and Indonesia. The patented connector was rigid, aesthetic looking and unique. As such it earned the name “Indonesia Space Frame” in the overseas market.

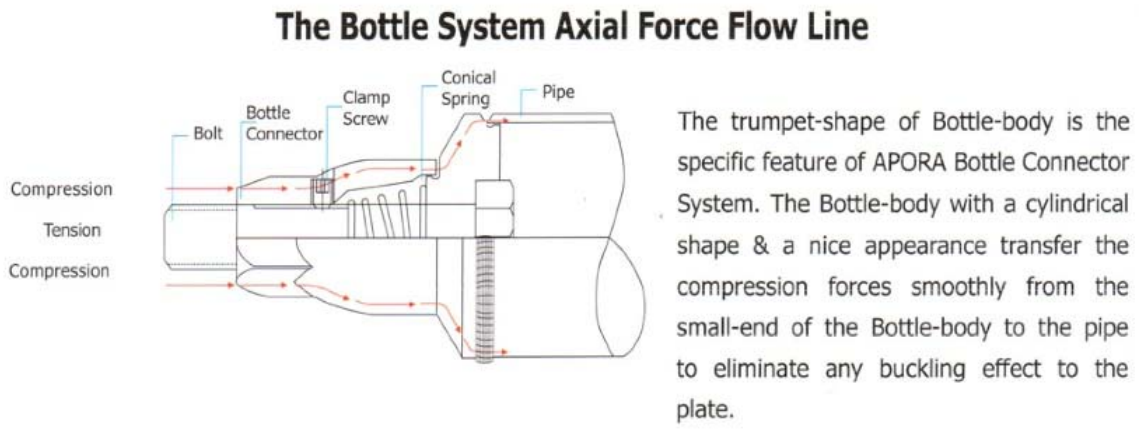
Space Frame

The space frame was a 3-dimensional steel structural network consisting of three kinds of elements: node, pipe and connector set. The structure could be formed into any architectural shape and had the capability for cantilever spanning of up to 100 meters. It was suitable for canopy, exhibition hall, station, stadium, skylight, tower, hangar, auditorium, and other similar structures (see Figure 1).

Figure 1. Sample of Space Frame Application

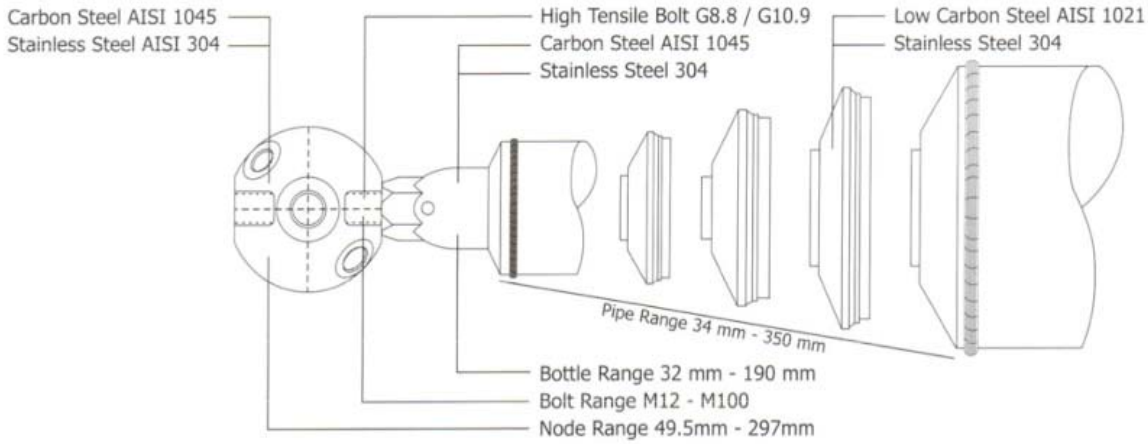
The most important element of a space frame structure was the ball joint, which served as the hub to which several pipes with different forces were connected. To connect the pipes to the node which was shaped as a ball, a special connector was required. This special connector was called the Apora Bottle Connector System as shown in Figure 2.

Figure 2. Apora Bottle Connector System (Patented)



The bottle connector had the following components range:

Figure 3. Components Breakdown



At close range, the connection would look like the picture below.

Figure 4. The Connection

The criteria for the choice of a good space frame include rigidity, lightness, speedy construction, design flexibility and factory finished color selection. It should be rigid enough to withstand earthquake and flood of a high magnitude. It should be light in the sense that it should use materials efficiently as a result of design construction. It should also give the architect flexibility to design the overall construction shape and select the color. How fast the construction could be erected was likewise a very important consideration. Unlike their competitors, Apora was ready to offer their customers a 20-year warranty for their constructions.

Apora's Assets

As a seasoned engineer, Kuku early on realized that breakthrough technology would be the major secret behind Apora's value proposition. He invested a great deal of effort in research and experimentation until finally he found a technique that he believed was to be the winning space frame technology.

Realizing that his practical background came from a material fabrication and machining orientation, Kuku decided to collaborate with academicians from well-known local and overseas universities to enrich and strengthen Apora's offering.

As a result of Apora's R&D efforts, the company had successfully invented the following:

- Simulation software, Apora Smart Program for Space Frame (ASSF) that served as an indispensable tool to visualize, simulate and analyze the forced impact of strong wind, earthquakes or flood on the whole frame structure.

- Apora Node, a machined surface node with an accuracy of up to 0.1mm to ensure that the bottle connector could accurately connect to the node.

- Apora "Bottle" Connector System, consisting of bolt "bottle" body, conical spring and plate. This trumpet-shaped bottle-body was a unique connector system that could transfer compression forces smoothly from the pipe to the node. This system was protected with the following patent rights:

  1. Indonesia Patent No.ID0005548 since October 2000
  2. Chinese Taipei Patent No.117691 since November 2000
  3. PRC Patent No. ZL 96108002.7 since November 2002

- Apora Welding System using a gas metal arc welding (GMAW) to weld the plate to the pipe. This tailor-made automatic welding machine resulted in high welding quality and efficiency.

In spite of the company's three patents, Kuku was not sure if the company could continue to move forward. He was the driving spirit behind the inventions all these years. Already in his mid-sixties, he was wondering how far the existing engineering team could continue to excel without him. He was hoping that at least one of his three siblings would someday want to carry on company operations.

Apora had 40 employees working in the manufacturing floor with Mr Alex

Gunawan as the lead engineer, seven were in sales and marketing, and 13 were in back-office administration.

The company had a production capacity of 10,000 square meters of space frame per month. Extra capacity could be readily achieved by adding shift(s). As a guideline, Apora's unit selling price was $3.5 per kg of installed space frame as compared to the price set by competitors which ranged from $2.4 to $4.1 per kg. The cost structure of Apora was roughly 60% materials, 25% direct labor and 15% overhead.

The space frame unit weight (kg/sqm) varied in different economies depending on the local condition, or whether the structure was designed to withstand hurricane, snow, major flood or extreme temperature changes like 20°Celsius to 60°Celsius. For Indonesia the space frame's typical unit weight varied between 17kg/sqm to 27kg/sqm, depending on structure size and magnitude of load condition.

The total price of space frame could be calculated using the following formula:

Total weight = total area (sqm) x unit weight (kg/sqm)
Total price = unit selling price (USD/kg) x total weight (kg)

Given a certain design, size of structure and magnitude of load conditions, the proponents could come up with the total weight based on their own calculation, knowledge and experience. Multiplying the total weight by the unit selling price would yield the total price. To achieve the lowest total price, a manufacturer could either lower the unit selling price or lower the total weight, or do a combination of both.

As mentioned earlier, rigidity and lightness were two of the important criteria for space frame selection. Whoever could come up with the required rigidity and lightness in weight of the structure would definitely be able to offer a better price. This was where knowledge and experience came into play. Everything however must conform to the provisions of the Steel Code and Space Frame Code. Hence, the lower priced space frame did not necessarily mean the best choice since non-compliance with the Codes could mean higher risk.

The other important asset of Apora was its long-term relationship with customers, business partners and suppliers. Space frame was always a subset of a construction project and never a stand-alone project. As such, the selling had always been done through main contractors, which made relationship management quite sensitive and complicated.

Take the following case as an illustration:

The project owner, say a local government, would want to build a new sports stadium. The first thing that the local government as project owner would do would be to hire a management consultant to prepare the terms of reference (TOR) and run a tender. Next, the main contractors would submit their bids based on the TOR. The winner could then subcontract the space frame part to the manufacturer who could give the best offer.

To win a project, Apora would have to convince the main contractors. It had to develop a good relationship with the management consultant who wrote the TOR, and with the ultimate owner of the project. Once the main contractor had been appointed,

the owner would no longer be in full control of the subcontractor selection. Over the years, Apora had become quite good at managing the various nuances of these relationships in the domestic market.

Sales

Domestic large space frame projects were mostly related to the construction of a new sports stadium, conference hall, train/bus station and airports, among others. The government most likely owned these types of projects. Apora was not keen on chasing smaller projects like windows canopy, rooftop and other similar projects.

Certain large projects were cyclical. Indonesia had a regular agenda to hold a National Sporting Competition Week (PON) at a four-year interval. The host city was rotated among the 35 provinces in Indonesia. To support the event, the host city would usually start building a new sports stadium with all the support infrastructure two years before the event. Apora won the first PON project in 1988 and some of the subsequent PON projects in 1992, 1996, 2000, 2004 and 2008.

The next major bid Apora was very much hoping to win was for the PON 2012 project. The bid was due to be completed in early 2010 so that construction could start immediately after. Pekanbaru, the capital city of the oil-rich Riau province in Sumatra Island would be the host city. The total space frame area for the sports stadium alone was 37,500 sqm. This was roughly equivalent to almost four months of Apora's production capacity and worth $3.5 million-$4 million in revenue. In addition to this project, Riau also planned to build a new airport.

Apora experienced good overseas sales when it exported the products to ASEAN economies in 1989. Sales went up significantly because of demand coming from Chinese Taipei, Malaysia, and Singapore in the early 1990s, and continued on through 1995.

The invention of the Apora Bottle Connector in 1995 marked an important milestone for the company and gradually boosted its overseas sales further up through the end of 1999. In contrast, the domestic sales for the same period were close to none due to the monetary crisis that started to hit the country in July 1997. After 2000, overseas sales started to decline through 2008.

In 2009, both domestic and overseas sales dropped significantly, driven by the world financial market meltdown in the USA. It was indeed a double whammy for Apora.

Competition

Apora's strongest competitors in the international market were manufacturers from China, England, Korea, Mexico, Spain, Turkey, and the USA. However, Apora had already gotten used to aggressively competing with them and had no fear of the competition.

Ten to fifteen years, ago competition was not as sophisticated as it was in early 2010. The fast-changing manufacturing technology, coupled with pervasive Internet technology, made the competition fiercer. Buyers had more options than ever before at their convenience.

In the domestic front, the closest competitors were companies A and B, which were at a lower level than Apora in terms of technology sophistication and were not holders of any patent rights. They were believed to be catching up, however. Among the three, Company B offered the lowest price and had the strongest sales force. Apora had the most sophisticated operations, but also offered the most expensive product.

The local market found the Apora product to be 20%-30% more expensive than those of its competitors, although it was better in terms of quality. The customers, however, did not always need the high specifications of the Apora product. Oftentimes, Apora found it difficult to meet the customers' request to lower the specifications of their product so as to make it more affordable.

Decisions to Make

Kuku contemplated deeply what actions he and his key managers should take to turn around the company situation. He decided to call all his "lieutenants" for a Monday morning meeting the following week.