

Shipbuilding: Productivity & Efficiency Benchmarking

In this section various parameters that are critical to achieve competitiveness in the manufacturing sector have been studied along with progression of Indian vis-à-vis competing countries on the competitiveness protocol.

Detailed benchmarking results are formulated below:

Cost Structure

India has an edge over other countries in terms of labour costs. The labour cost per worker in India is estimated at \$1,192 per year, against \$10,743 and \$21,317 per worker in 2007 in leading shipbuilding countries like South Korea and Singapore¹⁰. Labour cost is a key factor in shipbuilding nations as it accounts for more than 10% of the total costs. China also has considerably lower labor costs as compared to competing countries. (Around 50% of Korea and Japan).

From raw material perspective, India relies on imports for most of the inputs consumed in shipbuilding which puts cost pressures on Indian shipbuilding firms. On the other hand, China is the cheapest steel manufacturer in the world which helps its yards to reduce costs and lower their shipbuilding prices in the global market

Further, India has a disadvantage with respect to financing costs. In China, the government provides sovereign refund guarantees for certain class of vessels, thus removing any related burden on the shipyard. In Korea, shipyard financing has matured and the evolved mechanisms drive the cost lower.

As per a FICCI report, a shipyard typically requires a working capital of around 25-35% of the cost of the ship during the entire construction period. The interest rates on working capital in India are in the average range of 10-10.5%. In contrast, the interest rates presently offered to shipbuilding yards overseas are significantly lower. They stand at 5-6% in Korea and around 4-8% in China. In addition, the export credit in these countries is offered at much lower interest rates.

The absence of support infrastructure like surface road links and properly equipped terminals have further put pressures on logistics and transportation costs in India

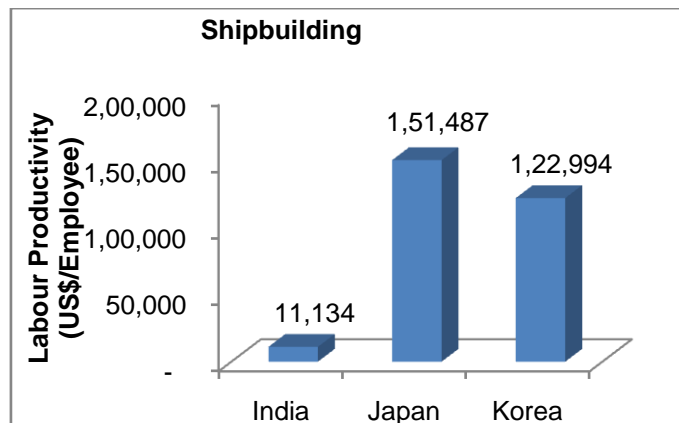
Further to this, high port charges, like port dues, berth hire, pilotage and cargo-handling charges, in India are also affecting the Indian shipping industry. This makes the Indian ports non-competitive compared to other foreign ports.

Productivity

Labour Productivity is the measure taken for benchmarking the productivity of Indian Shipbuilding industry vis-à-vis competing countries. Labour productivity has been estimated as a ratio of Gross value added (GVA) to the number of workers.

¹⁰Bharati Shipyard Annual Report 2006-07

Higher labour productivity of competing countries (Japan & Korea) is one of the sources of competitive advantage over India, as shown in the charts below:



Source: UNIDO

India has huge disadvantage against both the competing countries with labour productivity almost one tenth of both Japan & Korea. Japan emerges as a leader with slight advantage over Korea in labour productivity in shipbuilding segment. Although Japan is the leader in labour productivity, Korea has got the highest gross value added but higher number of labour force has decreased its productivity figures.

There exists acute shortage of basic skills required for the industry. Workers working as welders, fitters, etc. are uneducated, in many cases even illiterate. The technology used at the shipyard has to be friendly for them to use. There is lack of manpower with techno-economic specialization in shipbuilding.

Process Time

Process time refers to the total time taken by a firm in manufacturing and ensuring that the product reaches the target market. Hence it is a very important measure of competitiveness of the sector. Countries which are able to achieve faster turnaround time and have quicker time to market will enjoy competitive advantage in the market.

Indian shipbuilding industry has poor infrastructure support in terms of transport and logistics facilities. There is relatively low hinterland connectivity for most of the cargo handled in the country within the ports. This delays the entire production and distribution cycle for Indian industry. Therefore, it is important that connectivity of major ports with the hinterland is augmented not only to ensure smooth flow of traffic at the present level but also to meet the requirements of projected increase in traffic.

In India, inadequate port facilities have become a bottleneck to the development of shipbuilding sector. This has often resulted in higher turnaround time at ports and high cost of administrative delays. According to an analysis by KPMG, the turnaround time at ports for India has been 84 hours when compared to 7 hours in countries such as Hong Kong and Singapore.

There is also a major problem with respect to inadequate warehousing facilities. Domestic ports suffer from inadequate storage facilities, which result in delay in consignment delivery. Poor infrastructure facilities for loading and unloading cargo at ports, insufficient aid from the maritime states for the development of infrastructure for coastal shipping, poor road connectivity at the minor ports, lack of cargo generating centers at the hinterlands near the ports and such other disadvantages make the shipping industry in India, lag far behind those of its other Asian counterparts.

Capacity Utilization

Indian yards lack the capability to build large and modern ships. Presently, the Cochin shipyard is the only one that has the capability to build large and modern ships. Hence shipbuilding in India lacks infrastructure support which reduces the capacity of production. Also, the average age of Indian ships is over 16 years compared to a global average of around 12 years. To reduce this disparity, it is crucial that Indian companies acquire a younger fleet. Indian companies need to increase their fleet size in order to increase their competitiveness. Also the existing port infrastructure is insufficient to handle trade flows effectively.

The manufacturers in India also suffer from the disadvantages accruing from small scale of operations. The shipbuilding sector in China and South Korea has received government fiscal and policy support, enabling them to develop scale as well as a cluster of ancillaries. These advantages of scale are not available to Indian shipbuilding industry, which imports most of its input materials and is therefore unable to leverage advantages offered by bulk purchases and Just in Time supplies.

According to industry sources, shipbuilding nations around the world have been enjoying subsidy as high as 40% from their respective Governments on new ship-building cost. With such support not available for the shipyards in India, they are relatively uncompetitive in the global market place. Further, the existing ship building capacity is quite inadequate in the context of growing trade.

System Improvement

This section covers the level of innovations, investment in Research & Development, investment in training etc. provided by the sector in order to increase its competitiveness. These parameters enhance the productivity and sustainability of the sector.

India has disadvantage in terms of poor infrastructure, innovation and less investments in Research & Development as compared to Korea, Japan and China. It may be noted that leading East Asian shipyards in Japan and Korea who had invested heavily in skilled manpower such as naval architects & engineers and innovations are reaping the benefits now.

Lack of ship designs and limited investment in R&D in ship designing and innovation hamper Indian shipbuilding industry. As of now there are less than a dozen firms in India that have basic design expertise. Some of these are standalone design units that do not have manufacturing facilities but team up with shipyards to form consortiums that leverage each other's competencies. Indian players need to work hard to meet the international players in ship automation and technology



Decide with Confidence

Indian yards lack the capability to build large and modern ships. Presently, the Cochin shipyard is the only one that has the capability to build large and modern ships. Storage facilities are needed so that more shippers can use the Inland Waterways Terminal to transport their goods.

Indian shipbuilding industry is at an early stage but has to compete against established yards in Korea and China to grab a share of the market. Its lower scale leads to several disadvantages in design and manpower costs. Leading shipbuilding countries support the industry by creating enabling policies for development of technical and manpower capabilities. For instance, China provides scientific research subsidy to maritime universities, and provides R&D and living allowance to postgraduate students, to ensure availability of a talent pool for shipyards