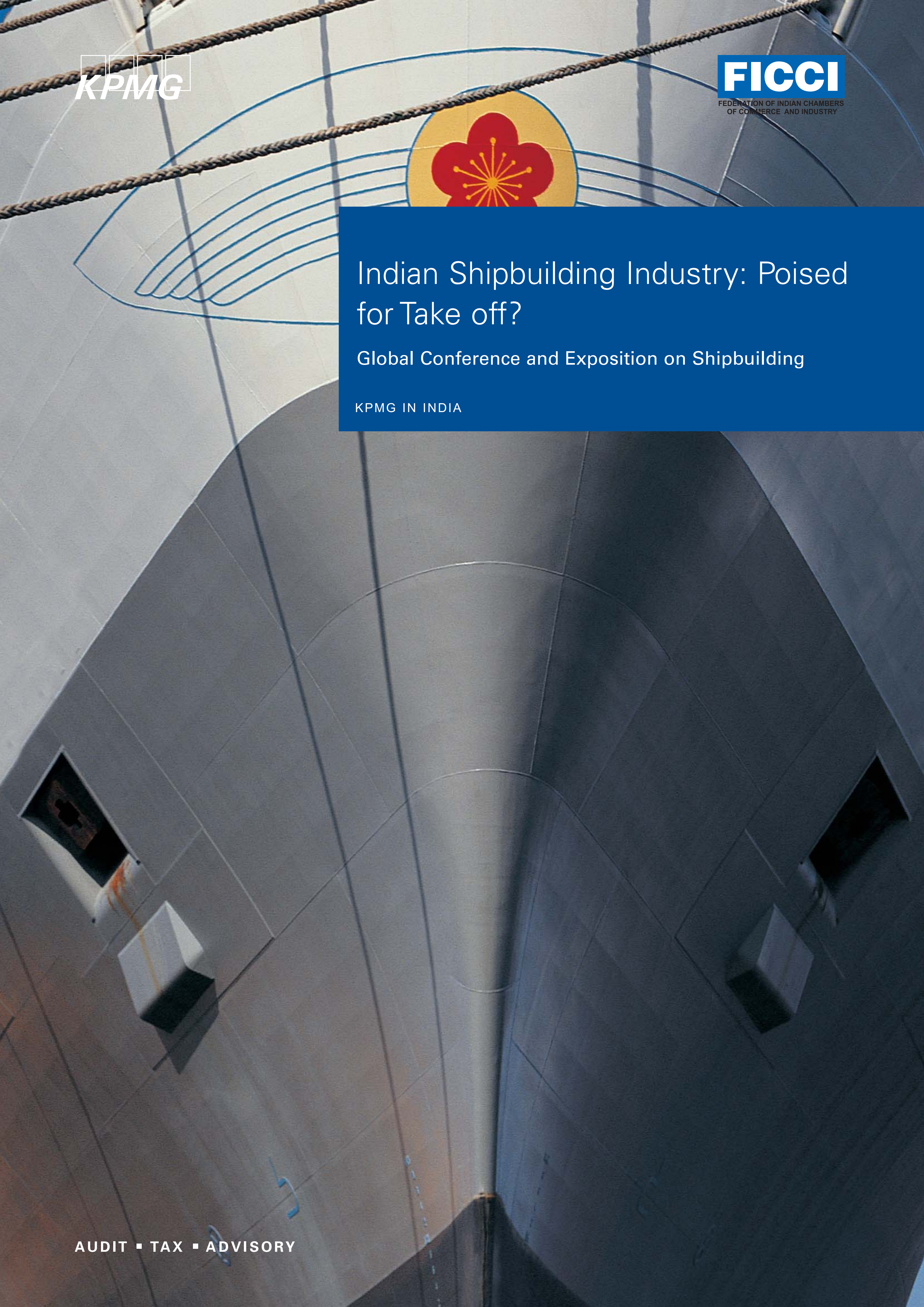

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Indian Shipbuilding Industry: Poised for Take off?

Global Conference and Exposition on Shipbuilding

KPMG IN INDIA

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Preface

The global shipbuilding industry is in the midst of an unprecedented boom at present. At the end of 2007, the global order book had swelled to 457 mn DWT having quadrupled in the last 5 years.[1] This large increase in demand has led to the emergence of new shipbuilding destinations. Countries such as China and to some extent Vietnam, Philippines and Taiwan have leveraged their inherent advantage of low cost manufacturing to enter into shipbuilding.

Indian shipbuilding industry has also witnessed healthy growth in the recent past. The annual turnover of the industry has increased by 259 percent from 2002-2007.[2] Spurred by this recent growth several companies are setting up shipbuilding capacity. The existing shipyards are aggressively expanding capacity. The overall announced investment of the upcoming private shipyards exceeds INR 200 billion, all proposed to come online within the next 5-7 years.[3]

Given the inherent labor intensive nature of the shipbuilding industry, India has a natural advantage by virtue of its lower cost of labor and availability of skills. However, in order to establish India as a preferred shipbuilding destination certain areas have to be addressed. Elimination of regulatory hurdles and continuance of support in line with that enjoyed by competing nations like China and Vietnam are required for the industry to develop scale.

Development of a mature large scale shipbuilding industry in India is likely to drive the development of the heavy engineering industry – a critical support for not just shipbuilding but other key infrastructure sectors like Power and Aviation. The INR 200 bn investment in shipbuilding has the potential to trigger an additional investment of INR 2200 bn in related sectors such a steel and engineering goods manufacturing, IT/ ITES and consumables.[4]

In addition, labor intensity of shipbuilding and ship repair along with the growth in linked ancillary and support industries would lead to significant employment generation. Employment to the extent of 0.4 million new direct jobs in the shipbuilding sector and around 2.4 million new jobs in related sectors could be generated if the above investment commitments are realized.[5]

This KPMG whitepaper provides an overview of the global and Indian shipbuilding industry and elaborates the opportunities and challenges for India in becoming a preferred shipbuilding destination. I hope you find it useful.

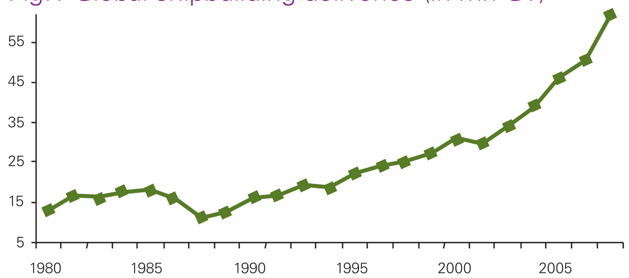
Arvind Mahajan,
Executive Director, Advisory Services

[1] Source: Clarkson's Data, KPMG Analysis
[2] Source: SAI, KPMG Analysis
[3] Source: SAI, KPMG Analysis
[4] Source: SAI, KPMG Analysis
[5] Source: SAI, KPMG Analysis

Shipbuilding has witnessed robust demand growth

Shipbuilding has historically witnessed a robust growth in demand for new vessels. Though the short term demand has seen peaks and troughs, overall the sector has shown a healthy rising trend in demand (refer Fig 1). The overall CAGR between 1980 and 2005 is around 6 percent, which is higher than most manufacturing industries.

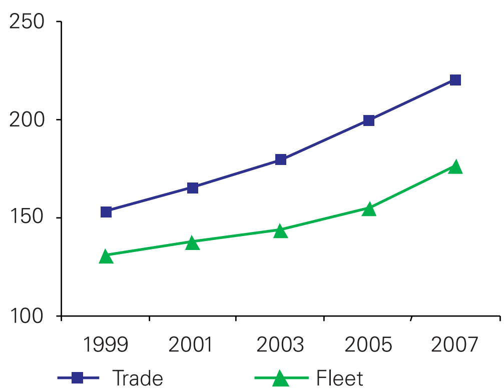
Fig.1 Global shipbuilding deliveries (in mn GT)



Source: Clarkson's Data, KPMG Analysis

At present, the sector is amidst an unprecedented boom, unseen in the last three decades. At the end of 2007, the global order book had swelled to 457 mn DWT having quadrupled in the last 5 years. The key reason is the rapid increase in new orders which has outgrown in the increase in global shipyard capacity. Average delivery in the last 5 years has been around 60 mn DWT whereas new orders in the same period have been around 100 mn DWT per annum.

Fig. 2 Gap between trade and shipping fleet
(index with base at 1998 =100)



Source: Clarkson's Data, KPMG Analysis

This unparalleled growth has been because of a unique situation where several drivers have pushed new building demand at the same period. The key among these drivers are as follows:

Commodity driven trade growth: There has been a discontinuous growth in commodity trade (refer Fig. 2) with the rise of emerging economies like China and India and shifting of production bases

Super-sizing: In recent years, the average size of ships has increased substantially due to freight saving from scale-economies and is creating demand for larger size vessels. For instance, the average containership size has more than doubled over the past 4 years, increasing from 1,967 TEU in 2003 to 2,372 TEU in 2007[6]

Replacement of aging fleet: With an average life span of 30 years, a sizeable proportion of the current fleet which came in life around 1975 reached the replacement age from around 2005, spurring new building demand

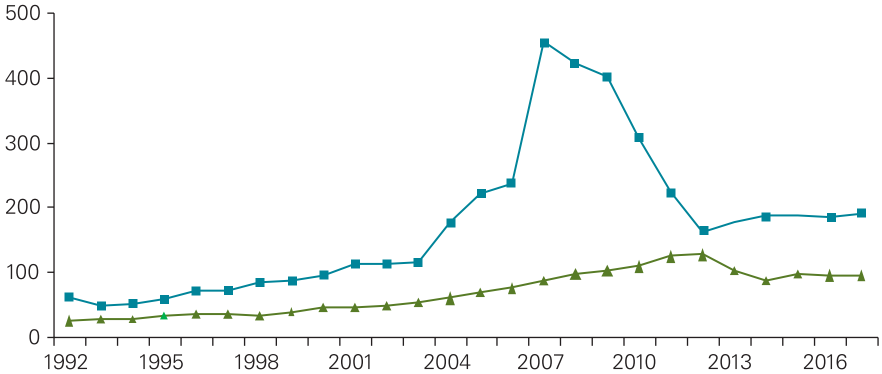
Conversion of single-hull tankers: Concerns around the risk of environmental damage arising from single hull tankers have led to regulation that necessitates replacement of single hull Very Large Crude Carriers (VLCC) by double hull tankers or Very Large Ore Carriers (VLOC), further boosting shipyard activity.

[6] Source: Nomura Research

Healthy demand growth is likely to continue in the long term

In the long term, shipbuilding demand growth is likely to demonstrate continued healthy growth. The basic driver of shipbuilding is global seaborne trade which is growing at a healthy rate of 4 percent in the last 25 years and is likely to continue doing so.

Fig. 3 Global shipbuilding order book and deliveries (in mn DWT)



Source: Clarkson's Data, KPMG Analysis

Latest trends indicate that the shipbuilding demand is reaching a short-term peak[7] and it is estimated that that by 2012, the shipbuilding market would stabilize. Thereafter, the demand would return to its secular growth rate over the long term.

Deliveries would increase as well as the order book, and the ratio between them would remain at historical levels (refer Fig. 3).

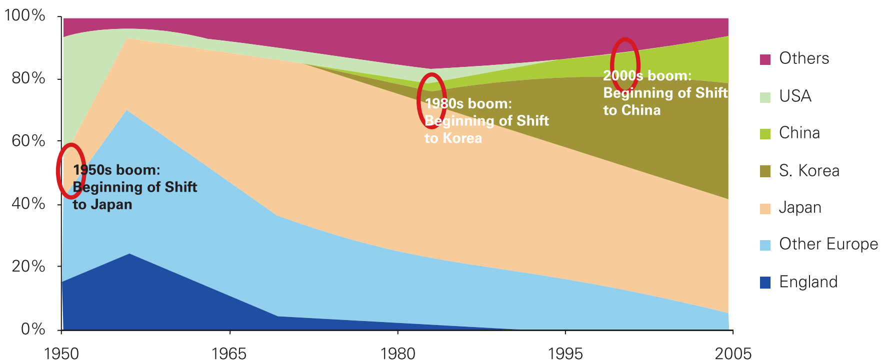
[7] New orders in 2008 have declined by over 30 percent compared to last year.

Supply bases have shifted to new destinations driven by supply constraints and cost advantages…

Shipbuilding is a truly global industry as trading of ships is not protected by any tariff barriers. This can be ascertained by the fact that more than 90 percent of Korea's (the world leader) current order book is for exports[8].

The industry has changed supply bases to low cost destinations in the last century. New countries have gained prominence, especially during boom periods. England and US were the world leaders till 1950(refer Fig. 4). Japan and Korea emerged as prominent shipbuilding nations during the 1950s and 1970s. The current boom has brought China to the fore (refer inset on China). Korea, Japan and China account for more than 85 percent of world deliveries at present.

Fig.4 Share of different countries in deliveries

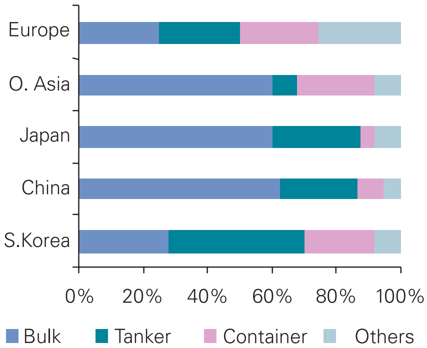


Source: www.shipbuildinghistory.com, KPMG Analysis

Vessels with lesser complexity are moving to newer destinations given the relative ease in their manufacture and relatively lower levels of customer loyalty in their purchase. The current order book of Korea and Europe is tilted towards complex vessels such as container ships and cruises, while that of emerging nations and China is dominated by bulk vessels (refer Fig. 5). Emerging nations have therefore started with bulk orders and might gradually move up the value chain with experience.

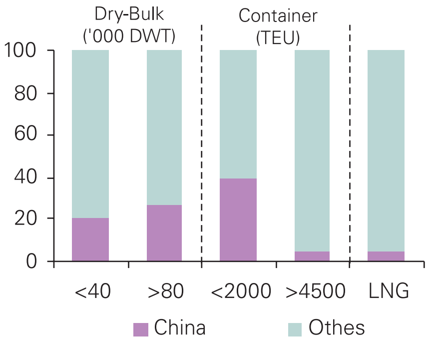
[8] Source: Clarkson's data, KPMG Analysis

Fig. 5 Share of vessel types in countries' order books by size



Source: Clarkson's Data, KPMG Analysis

Fig. 6 China's market share in shipbuilding



Source: Deutsche Bank, KPMG Analysis

The drivers for such shift in shipbuilding bases are capacity constraints in leading countries and lower shipbuilding costs in the emerging nations. The lower cost comes from inherent economic advantages (e.g. cheap labor) and enabling Government support which could result in a reduction of shipbuilder's cost (e.g. direct/indirect subsidy) or the ship buyer's cost (e.g. export buyers credit). Countries such as Vietnam and India, with inherent economic advantages, are well placed to emerge as new players and grab a fair share of the shipbuilding pie.

Case Study: Emergence of China[9]

China's rise as a shipbuilding power is awe inspiring. Within a span of five years China has risen to become the third largest shipbuilding nation after South Korea and Japan in terms of deliveries. In terms of order book size it has surpassed Japan as well, indicating that it might soon be edging Japan out of its long held second spot.

China aims to become the world's leading shipbuilding nation by 2015. The Chinese Government, through its two large companies – CSSC and CSIC and host of other public/ private shipyards is adding massive capacities. What have been the drivers for China growth story? Chinese Shipyards have been propelled by a combination of favorable Government policy and economic factors.

China is currently into its 11th five-year plan, which has a strong emphasis on shipbuilding like the previous plan. The Government favors domestic shipping lines such as COSCO purchasing ships from Chinese yards and provides them with discounts and economical credit for the purpose. For exports, the Government has other benefits such as VAT refund on export and providing sovereign guarantee and low margin credit to ship buyers.

China's biggest economic advantage is low labor cost. Even after incorporating productivity differences, Chinese labor cost is around 50 percent of Korean and Japanese labor. That China is the cheapest steel manufacturer in the world also helps its yards to reduce cost and lower their shipbuilding prices in the global market.

However, there are a few concerns. China still has to depend on imports for 60 percent of raw materials. Government has set a target of reducing this to 30 percent by the end of the 11th five-year plan. Lack of technology is another obstacle that Chinese yards have to overcome to get orders for complex vessels. To address it, Chinese yards are tying up with Korean and Japanese yards for technology and focussing on smaller and less complex vessels (refer Fig. 6).

[9] Source: Clarkson's Data, KPMG Research, Deutsche Bank

Indian shipbuilding industry has demonstrated strong growth

The year 2002 served as a water-shed for Indian shipbuilding industry. In that year, the Government of India introduced a subsidy scheme for both public and private sector shipyards. The subsidy was targeted at addressing the distortions of the domestic economic environment which impact domestic shipbuilders adversely as well as addressing the impact of direct and indirect support provided to the shipyards in other countries. With global shipbuilding witnessing an upward trend, the Indian shipbuilding industry has been able to take advantage of this Government support to establish its presence in global shipbuilding. The following table summarizes the growth experienced by Indian shipbuilders.

Table 1. Performance of Indian Yards (INR mn)

Period	Order Book	Turn Over	Investment
1997-2002	8,160	10,170	430
Between 2002-2007	148,770	36,570	8,430
Percentage difference	1,723%	259%	1,860%

Having gained experience and some credibility with international buyers, Indian yards are now graduating from smaller vessels such as OSV/PSV to larger vessels such as bulk carriers. Recently, the Ratnagiri-based Rajapur yard has won the order to build 300,000 DWT VLCC, the first order of this size by an Indian yard.[10]

10 Source: Clarkson's Database, KPMG research

Healthy growth has attracted new players into shipbuilding[11]

Spurred by this recent growth, several companies are setting up shipbuilding capacities. Most existing yards, such as ABG and Bharati are expanding capacity and undertaking green-field expansion. Port companies, notably Adani and SKIL are in different stages of developing shipyards. Shipping lines are eyeing shipyards as lateral expansion. Apeejay Shipping, Mercator Lines and Garware Offshore have entered the shipbuilding market in alliance with leading players. Finally, related heavy industry players are also planning to grab a share of this market. This segment includes engineering giant L&T, and steel makers Tata and JSW. The overall announced investment of the upcoming private shipyards exceeds INR 200 billion, all coming online within the next 5-7 years.

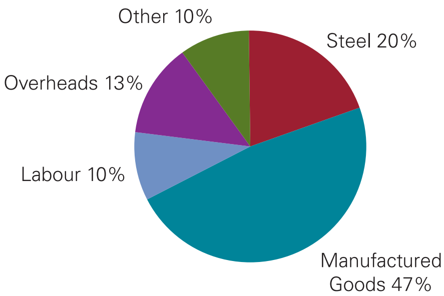
[11] Source: SAI, KPMG Research

India enjoys competitive advantages

India also enjoys several of the advantages which have propelled emerging countries such as China and Vietnam into the forefront of global shipbuilding. Some of the key advantages that can be leveraged by shipbuilders in India are:

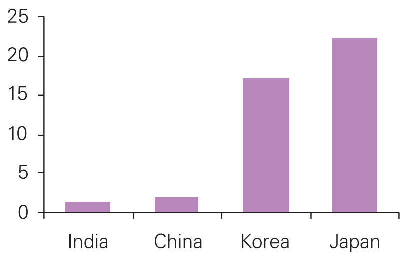
Low Labor Cost: Low labor cost is a key driving factor in shipbuilding nations, as it accounts for more than 10 percent of the total cost (refer Fig. 7a). Indian labor costs are on the lower side as compared to those of the leading shipbuilding nations (refer Fig. 7b). Even after factoring in impact of productivity, Indian labor is substantially cheaper than Korean and Chinese labor. More importantly, Indian labor cost is growing at half the rate in China, which implies that India might continue to have an edge over China in the future.

Fig. 7a Share of various inputs in Guangzhou yard, China[12]



Source: BNP Paribas, KPMG Analysis

Fig. 7b Cost of Labor in 2008 (USD/ day)



Source: EIU, KPMG Analysis

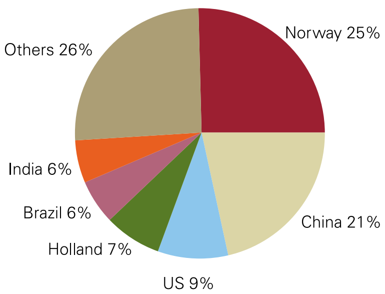
Strong Domestic Demand: Indian shipping trade is booming on the back of economic growth at the rate of approximately 8 percent. Domestic shipping lines are expanding their fleets and have placed orders with global yards. There is also a strong thrust in basic sectors such as power and steel and companies are looking to acquire ships to control transport from international mines.

[12] Source: Guangzhou is a leading yard in China owned by CSSC. 'Others' includes SG&A cost and financing expenses.

The Government's new initiatives in Coastal Shipping and IWT, is likely to further boost demand for new ships. New ports and IWT lanes would require dredging and other port-related vessel support. Finally, the ongoing offshore explorations are expected to create demand for rigs, OSV and PSV. Thus, even in a possible short-term low demand scenario, there is enough domestic demand, which Indian shipbuilders can capitalize upon.

Supporting industry infrastructure for some components: India has domestic industries which can produce some of the raw materials required in shipbuilding. Specifically, India has competitive steel manufacturing, light engineering and IT/ITES industries which can offer the required products at economical costs. These industries are currently not producing goods for the shipbuilding sector, mainly due to lack of sufficient scale of shipbuilding in the country.

Fig. 8 Share of deliveries in 2007 for dredgers, tugs and OSVs (in DWT)



Source: Clarkson's Data, KPMG Analysis

Long Coastline: India enjoys a long coastline of more than 7,500 km long with several deep water ports serving as good locations for setting up shipyards.

Other drivers for shipbuilding industry in India include the limited surplus capacity available with the global shipbuilding yards and a booming capital market which could provide easy financing for capital and operational expenses of these yards. India has proved its capability in shipbuilding in the area of smaller vessels (refer Fig. 8) by getting a sizeable market share. However, there are specific areas which have to be addressed if India has to achieve the same in larger vessels.

However, these advantages are negated by regulatory hurdles

Indian yards face systemic disadvantages in several areas which negate their natural competitiveness and adversely impact their chances of succeeding in a globalized shipbuilding industry. Indian shipbuilders face a cost disadvantage of 30-40 percent of the cost of manufacturing a ship on account of these factors[13]. The key disadvantages are as follows:

Statutory Burden

Shipbuilding attracts a complex set of levies and duties. The differential rate of duties and taxes between India and other nations leads to additional cost burden for Indian shipyards.

[13] All figures taken from Shipbuilding Economic Benefits and Benchmarking Government Support across Countries prepared by KPMG

Levies
Octroi, CST, VAT and excise are some of the levies applicable to shipyards. Several shipbuilding nations have relaxed these levies to encourage shipyards. For instance, China refunds VAT completely on domestic sale of ships whereas in India VAT is refunded only on inputs. The lack of such special incentives for the shipbuilding sector leads to an additional burden of 8 percent for domestic sales and around 3 percent for export sales.

Indirect Taxes
Service Tax @ 12.36 percent is applicable on all design and engineering services procured by the shipyards during the course of ship construction. It is estimated that the extent of service contribution in the contract price of a ship is around 12 percent. In countries such as China, a lump sum VAT is applicable, which is later refunded.

Corporate tax also impacts Indian shipbuilders adversely as compared to competitors in China and Vietnam. The governments in these countries offer a slew of incentives to the shipbuilding sector. Many segments of shipbuilding in China have been notified as 'Encouraged sector' which enable companies to offset a part of investment against taxation within five years of commencement. Such concessions help yards to reduce cost during the initial years when they are competing to establish themselves. However, the recent initiatives of Indian shipyards to structure themselves as SEZ enables them to offset this disadvantage significantly.

Financing Costs
Financing costs assume greater significance in shipbuilding due to its special requirements. Major shipbuilding countries have created supportive mechanisms to ease the burden of these costs. Indian shipyards, with no such direct support, face additional costs on account of financing.

Bank Guarantees
Shipyards are required to provide bank guarantees to protect the ship buyer. These guarantees comprise performance guarantee (for timely delivery), refund guarantee (for stage payments) and post-construction guarantee (towards defects).

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. However, in India, financial institutions do not have a focus on the shipbuilding sector and there is no support from the Government to reduce the charges as in the case of Korea. As a result, the cost of bank guarantees in India is higher than competing countries.

Working Capital
Typically, a shipyard requires a working capital of around 25-35 percent of the cost of the ship during the entire construction period. The interest rates on working capital in India average 10.5 percent. In contrast, the interest rates presently offered to shipbuilding yards overseas are significantly lower at around 5-6 percent in Korea and around 4-8 percent lower in China. In addition, export credit in these countries is offered at much lower interest rates.

Other costs
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. Korea established a ship laboratory entirely through Government funding in 1976 to introduce advanced foreign techniques and develop such techniques indigenously.

There is an increased focus by Indian shipbuilders on developing design capabilities either in-house or through established bodies like National Ship Design Research Centre (NSDRC). However, it may still take some time for India to mitigate this cost disadvantage which clearly depends on their ability to attract orders and offset a share of profit in these areas.

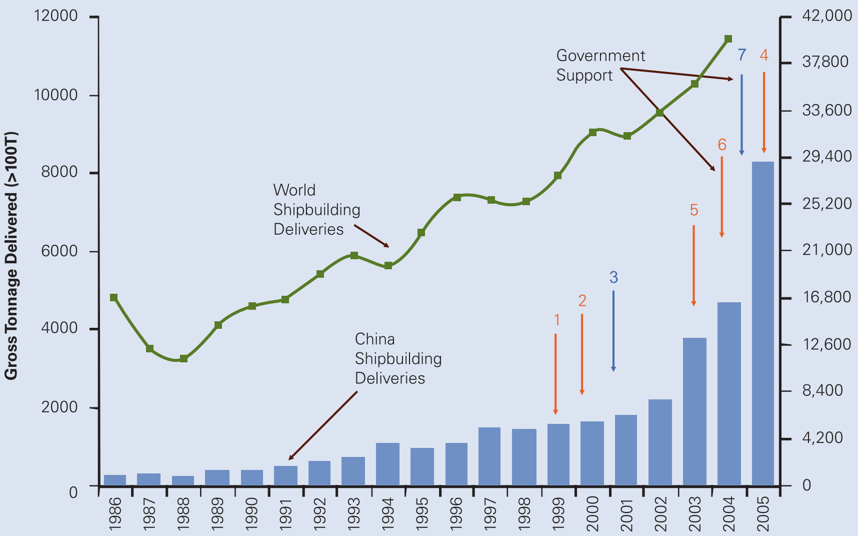
Government support is critical to mitigate regulatory disadvantages

In context of sales, the shipbuilding industry is a typical global manufacturing industry, however, when it comes to production, it is highly concentrated, due to the relatively high levels of state intervention. Most countries, through a series of measures, help the shipyards in reducing costs and attracting global business. The support provided by China is highlighted in the following inset.

Case Study: China's support to shipbuilding

China has followed the route of planned developmental rather than market-rational development for the shipbuilding sector. Over the last decade, China has undertaken a series of initiatives to promote and support the growth of shipbuilding industry. These measures, introduced at both central and provincial level, have contributed significantly to growth of shipbuilding sector in China. The following figure depicts the timing of these measures vis-à-vis the growth trend witnessed in the shipbuilding sector and clearly indicates that there was lead time in the realization of benefits.

China - Government Shipbuilding Support Trends



Source: KOSHIPA, KPMG Research

1. Loss reimbursement to domestic shipbuilders such as Dalian Shipyard
2. Scrapping aid on all ships produced during 1972-2001
3. Support in Acquiring land. Preferential rates on acquisition. Capital Tax subsidies provided. VAT refund is present up to 17 percent
4. Exchange Rate Control
5. Incentives to encourage shipbuilding industry development at Liaoning Shipbuilding Zone
6. Circular on accelerating shipbuilding industry development in Zhejiang province
7. Tenth five-year development plan for shipbuilding industry. Interim Provisions on Promoting Industrial Structure Adjustment.

The reason for this support is not hard to guess, viz. - on account of the large contribution of the industry to the country's economy. Interestingly, countries have not only supported the industry during its initial growth phase, but continued to extend benefits even when the industry matured. The support continued even during global downturn, underlining the significant correlation between shipbuilding and the national economy.

In India, the Government has traditionally been providing support to the Indian shipbuilding industry through various measures. While most of these measures were aimed at protecting the public sector shipyards, the Government introduced supportive measures for the private sector in 2002. The consequent strong growth in shipbuilding sector in India bears testimony to the criticality of Government support as shown in Table 1.

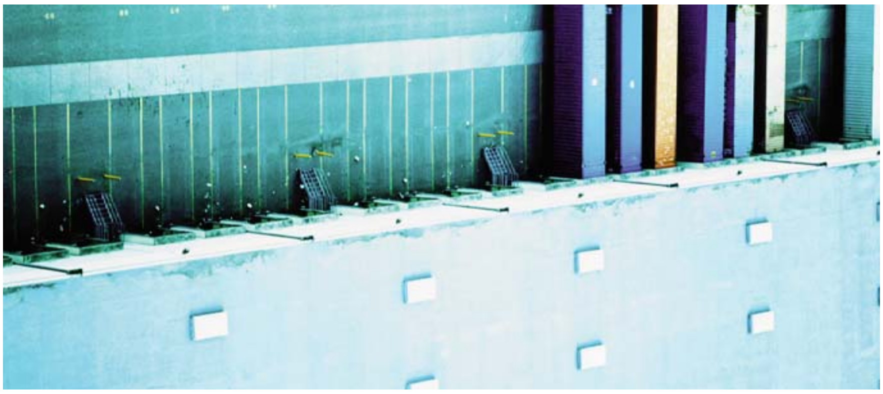
Currently, India has emerged as one of the potential leaders in the global shipbuilding market. However, the Indian yards are yet to achieve the critical scale to overcome the disadvantages compared to other competing nations. Hence, Government support is essential for India to realize its shipbuilding potential and enjoy the consequent benefits to the economy, at least till the time the critical hurdle is crossed. Certain states are already taking the lead. Gujarat, the current favored destination for Indian shipbuilders, is coming up with a shipbuilding policy, to further promote the sector.[14]

[14] Source: Marinelink

The following are some of the options that the Central and State Governments can use as supporting measures:

- Direct subsidy against contract prices
- Provision of refund guarantees
- State-funded or subsidized innovation, R&D to develop ship design, shipbuilding technology, or shipyard production expertise
- Project/ working capital finance on subsidized interest or interest-free loans, underwriting debt to reduce the commercial risk
- Preferential tax schemes for shipowners or for shipyards
- Exchange rate control for shipyards - this reduces one of the key risk factors
- Incentives to ancillaries – e.g. steel producers, main engine builders or equipment suppliers.

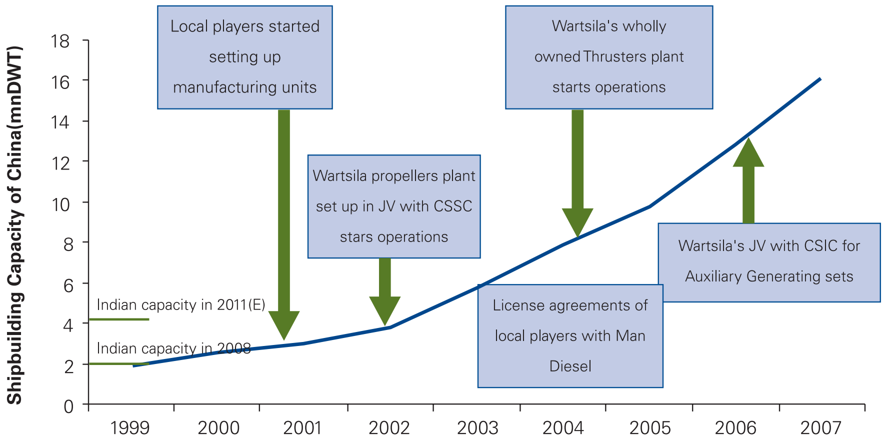
Government support is critical till the Indian shipbuilding industry gains critical volumes to remove its scale related disadvantages and remove its dependence on imports for procuring raw-materials.



Development of an ancillary setup

Ancillary industries usually lag the development of shipbuilding industry in any country. It requires the shipyards to achieve a critical mass before globally renowned ancillary companies such as Man, Wartsila, Caterpillar and Rolls Royce establish a sizeable presence there. This is evidenced by the evolution of shipbuilding input industry in China as depicted in Fig. 9.

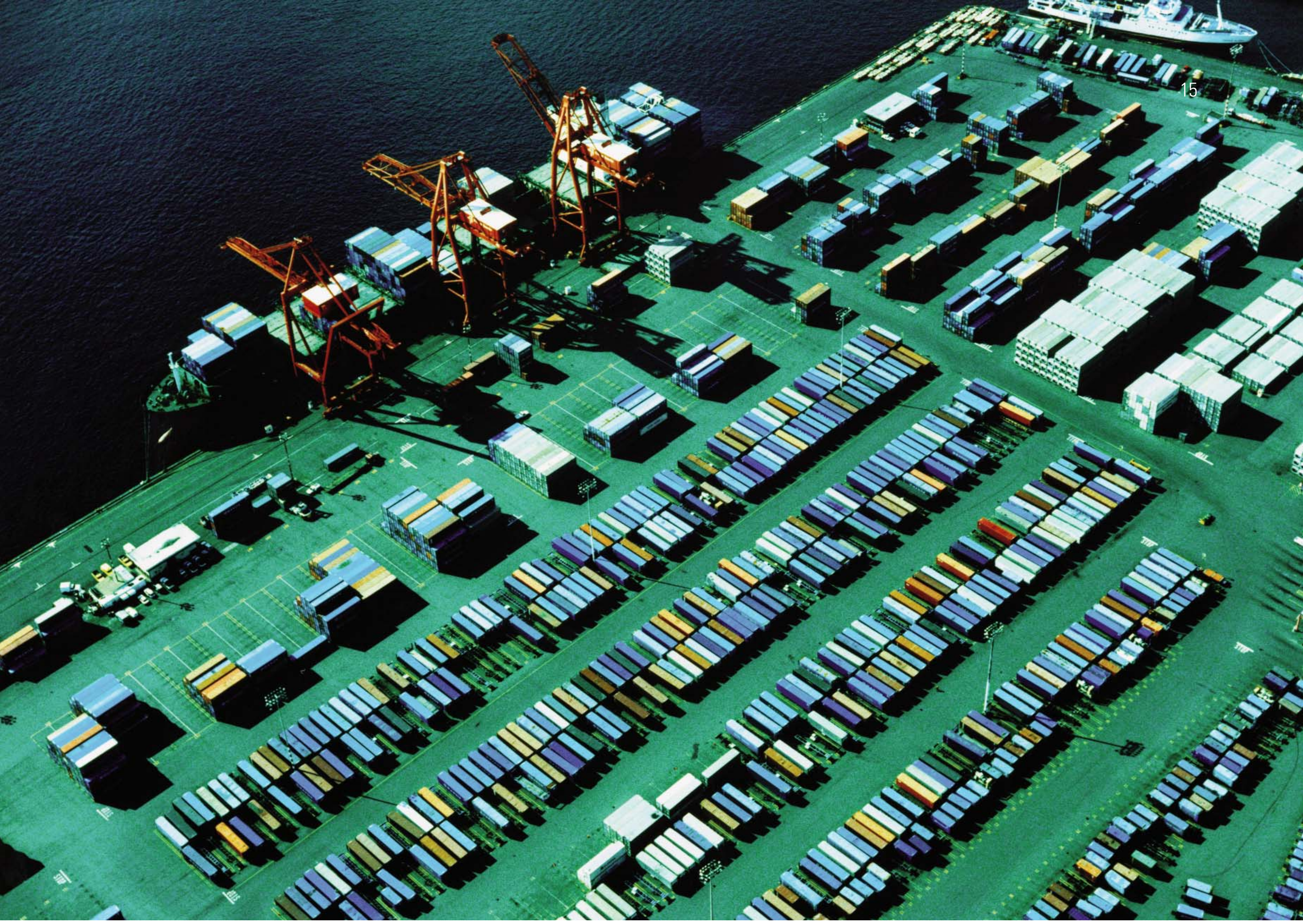
Fig. 9



Source: KPMG Research

Most globally reputed companies started establishing in China after 2002 when it crossed a capacity of 5 mn DWT[15]. Even then most of these are joint ventures with leading local shipyards to mitigate risk and tie-in customers. In contrast, India's current capacity as well as its expected capacity in 2011 is much lower than the Chinese threshold capacity. This might imply that Indian shipyards would continue their dependence on imports for sourcing their inputs.

[15] The capacity is not defined as a threshold volume but is shown as an indicator of scale



However, India's strengths in the manufacturing sector might advance the process here. India is recognized as a global player in light engineering and a major base for auto ancillaries. This has created a well-established pool of engineering graduates and supplier companies to such industries. India can be used by ancillary companies as a global production base catering to local ship builders as well as the global market.

Some signs of this occurrence are already visible. Man Diesel has set up an engine plant at Aurangabad and Wartsila is in negotiations with several domestic shipyards to set up a similar unit in the country. Rolls Royce is setting up an electronics and communication plant in Navi Mumbai.[16]

However, for India to have a sizeable component setup, domestic demand has to reach a critical mass to sustain global interest. Also, the shipbuilding industry needs to be proactive. As can be seen from Fig. 9, CSSC and CSIC as well as other local players partnered with manufacturing companies to start local production of these components. Indian players need to replicate the model.

16 Source: KPMG Research

The multiple benefits of shipbuilding justify the support[17]

Shipbuilding is a unusual industry as 65 percent of value addition during building of ships comes from other industries. Also, shipbuilding is a labor intensive industry. As an estimate, about 750 workers working for a year are required to build a 30,000 DWT vessel in India.

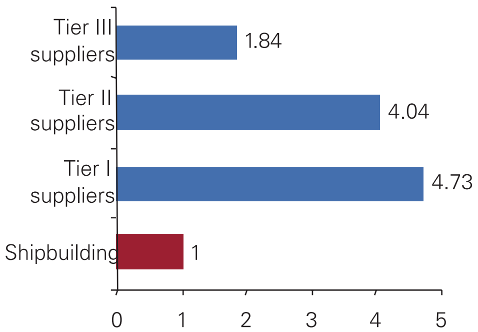
The growth of the domestic shipbuilding sector, which today imports about 45 percent of its input requirements, can provide a major trigger for large-scale indigenization of heavy engineering products and ancillaries. Heavy engineering industry is integrated with various core sectors for its demand. The demand is derived primarily from capacity creations in sectors like infrastructure and general manufacturing including process industries. Being an intermediate industry, its demand depends on end-user industries. However, as the end user industry mix is fairly diverse, it is necessary to generate long-term sustainable growth drivers for heavy engineering segment, in order to expand the manufacturing base and enhance overall manufacturing competitiveness. Shipbuilding industry can play the role of mother industry to heavy engineering, similar to the critical role essayed by auto manufacturing in case of light engineering. The growth projections for manufacturing in India would be much higher if the shipbuilding industry takes off in the next few years.

The Indian Shipbuilding Industry has demonstrated aspirations to acquire a 7.5 percent share in global shipbuilding by 2017, which is expected to have a size of above 500 mn DWT. Analysis suggest that this would require Indian shipbuilders to invest close to INR 200 Bn in new yard capacity, which interestingly, is the current level of cumulative investment declared by various entrants in this sector.

This INR 200 bn investment in shipbuilding can trigger additional investment of INR 2200 bn in related sectors such as steel and engineering goods manufacturing (refer Fig. 10a), IT / ITES and consumables. Likewise, shipbuilding is likely to generate a revenue of INR 800 bn and an overall revenue of INR 3300 bn including associated sectors. This revenue could provide around INR 250 bn in taxes for the Government.

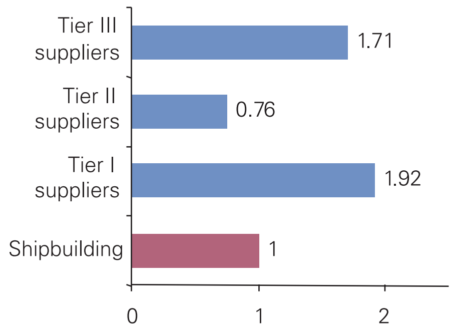
[17] Source: All figures taken from Shipbuilding Economic Benefits and Benchmarking Government Support across Countries prepared by KPMG

Fig. 10a Investment multiplier in shipbuilding



Source: KPMG Analysis

Fig. 10b Employment multiplier in shipbuilding



Source: KPMG Analysis

Table 2

Labor employed / Turnover (INR mn) for various industries	
Shipbuilding	97
Auto-Commercial Vehicles	12
Heavy Engineering	33
Construction-Civil	18

Source: KPMG Analysis

Such a scale of investment can also lead to significant multiplier benefits in terms of employment generation and investment in other manufacturing sectors. Employment to the extent of 0.4 million new direct jobs in shipbuilding sector and around 2.4 million new jobs (refer Fig.10b) in related sectors can be generated if the above investment commitments are realized[18]. Furthermore, the job creation potential of shipbuilding is more than other comparable sectors as can be seen in Table 2.

In addition, a healthy shipbuilding industry is also likely to attract ship-repair business. Ship repair is even more labor intensive than shipbuilding. India, with its labor advantage and its ideal position on international trade route, is well placed to wrest this business from competitors, once the shipbuilding industry is developed. This can create additional revenue and employment opportunities with marginal increase in investment.

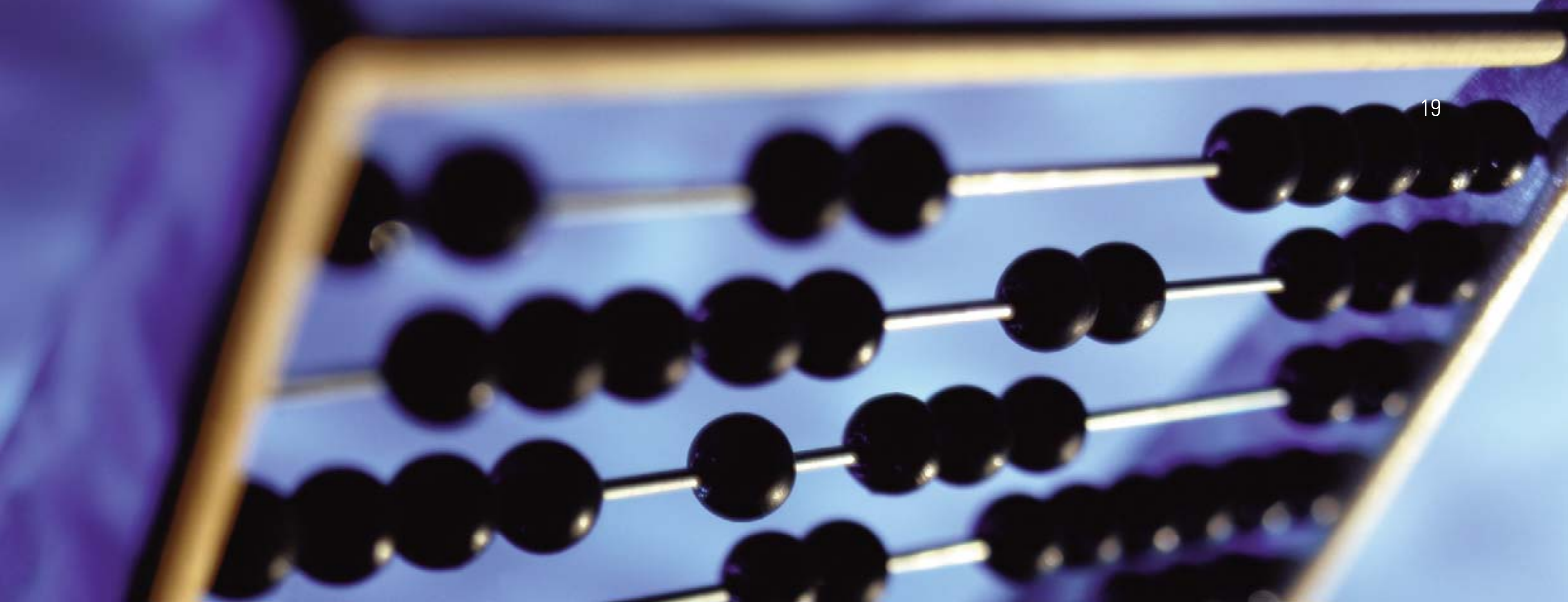
Finally, a booming domestic shipbuilding industry would also provide the much needed domestic capability which can be accessed for future needs of the Navy and Coast Guard and help realize the goal of indigenization in defence production.

[18] Source: Shipyards Association of India

Conclusion

The development of the shipbuilding sector has the potential to positively impact the economy including service sectors. To realize its growth potential, the sector needs to establish and achieve a critical mass. The window of opportunity presented by the ongoing boom phase needs to be capitalized to firmly ground the industry along with its ancillaries.

Indian shipbuilding has substantial plans for investment of around INR 200 bn over the next 5-10 years, in capacity expansion and up gradation of the existing yards. However, this investment and consequent benefits can materialize only if supportive measures are continued by the Government to address the systemic disadvantages affecting the competitiveness of Indian shipbuilding industry. In addition, proactive action by shipyards to promote ancillary buildup is critical. Addressing these disadvantages are likely to not only make the commercial shipbuilding industry competitive, but also create strategically beneficial options for meeting India's defense requirements.



Glossary

CAGR	Compounded Annual Growth Rate
CIF	Cost Insurance Freight
COSCO	China Ocean Shipping Company
CSIC	China Shipbuilding Industry Corporation
CSSC	China State Shipbuilding Corporation
CST	Central Sales Tax
DWT	Dead Weight Tonnage
EIU	Economic Intelligence Unit
GT	Gross Tonnage
INR	Indian Rupee
IT	Information Technology
ITES	Information Technology Enabled Services
IWT	Inland Water Transport
JSW	Jindal South West
KOSHIPA	Korean Shipbuilding Association
L&T	Larsen and Toubro
LNG	Liquified Natural Gas
MN	Million
OSV	Offshore Supply Vessel
PSV	Platform Supply Vessel
R&D	Research and Development
SAI	Sihpyards Association of India
SG&A	Selling General and Administration
SKIL	Sea King Infrastructure Limited
TEU	Twenty feet Equivalent Unit
VAT	Value Added Tax
VLCC	Very Large Crude Carrier
VLOC	Very Large Ore Carrier

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