



Study of the Vietnamese Shipbuilding/Maritime Sector

Final report

Norwegian Agency for Development Cooperation

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Report for the Norwegian Agency for Development Cooperation (Norad)



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Client: Norwegian Agency for Development Cooperation (Norad)

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Rotterdam, 30 June 2010

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Table of contents

Preface	7
Summary	9
1 Introduction	12
2 Vietnamese Maritime Industry	15
2.1 Introduction	15
2.2 Enabling environment	15
2.2.1 Political framework	15
2.2.2 Institutional framework	17
2.2.3 Education and research sector	22
2.3 Sector breakdown and main elements	24
3 Current Donor Status	30
3.1 Vietnam as lower middle-income country	30
3.2 Donors active in Vietnam	32
3.3 Donation related to the Vietnam maritime / shipbuilding sector	33
4 SWOT Analysis	34
5 Areas of potential collaboration	37
5.1 Fields of development for Vietnam	37
5.2 Roles for Norad and Norwegian industry	40
5.3 Specific Business Opportunities	45
Annexes	47
Annexes	47
Annex 1 List of abbreviations	48
Annex 2: Terms of reference	49
Annex 3: Literature overview	50
Annex 4: Mission programme	51
Annex 5: List of interviews held	54
Annex 6: report of Innovation Hanoi on issues 5 and 6	57

Preface

The Norwegian Agency for Development Cooperation (Norad) has assigned ECORYS to assess the Vietnamese shipbuilding/maritime industry and to draft recommendations for the potential contribution of both Norad and the Norwegian business community to this sector.

The findings presented in this report are largely based on a field trip to Vietnam that was held between 14 and 20 March 2010. During this trip, interviews were held with a great variety of companies and institutions both of Vietnamese and foreign origin. The willingness to discuss and the open mind of the people spoken to have helped us a lot to deliver the results as presented in this report. Also site visits to several shipyards were made which were useful to obtain an impression of the state of the art currently in place in Vietnam in the sector.

We would like to express our gratitude to the staff of Innovation Norway in Hanoi who have greatly contributed to this study, shared their views with us and introduced us to Norwegian and Vietnamese companies. Furthermore Innovation Norway has assessed issues 5 (Commercial and market assessment) and 6 (Specific Business Opportunities) of the Terms of Reference. Their report is included as annex 6. In our main report we have thankfully made use of the findings of Innovation Norway and have indicated this where applicable.

The field trip would not have been possible without the great support of VietValues Co. Ltd who have a wide network within the sector and are well aware of trends and developments ongoing in Vietnam.

Rotterdam, June 2010,

George Bruce
Johan Gille

Summary

Background and aim

Vietnam has entered the shipbuilding stage and has reached the top-5 of countries in terms of orderbook. The country's government has declared the sector one of its priorities and is investing in increasing its output capacity as well as the technology level of the sector.

Norway has a long history in shipbuilding and is one of the leading nations in specialised segments such as offshore and in high tech marine equipment. The development in Vietnam offers market potential for Norwegian businesses, while their skills can support Vietnam in further strengthening its sector.

The aim of this study is to investigate possible areas of cooperation.

Current status of Vietnam's shipbuilding

Vietnam ranks fifth in terms of orderbook after China, South Korea, Japan and the Philippines. Within Vietnam, the VINASHIN shipbuilding group is dominant with a market share of 70-80 percent and strong government backing. Since about five years it is open to foreign buyers and building gradually larger ships. Foreign investments play an important role. Although production is relatively inefficient, wage costs are low so that the country can remain competitive. Financial stability is, however, a concern.

The economic crisis has hit the shipbuilding sector worldwide, thus also affecting the Vietnamese yards. No new orders are coming in and the existing orderbooks are under pressure of cancellations and postponements. This affects the financial position of large companies like VINASHIN. Government policy is to maintain production to ensure employment for the expanding Vietnamese population, but at the same time this increases the financial problems for the shipyards. As foreign owners are cancelling orders, part of their orders are completed on own account of the yards or sold to other state-owned companies like VINALINES, which implies a transfer of the financial problems to others.

The Vietnamese shipyards appear to be less labour efficient than those of other countries. However the average wage cost is also much lower than in competing shipbuilding nations resulting in position that still is net positive.

One of the concerns is the limited availability of local production of marine equipment. Most needs to be imported which is costly and which limits the Vietnamese economy to benefit from the sector's development. It is therefore the country's strategy to increase the local share and this requires investing in facilities and skills for marine equipment manufacturing.

Donor status of Vietnam

Vietnam is about to become a Middle Income Country which means that development aid support will be gradually reduced and replaced by soft loans, allowing business to business development to take on a more prominent role. In order for Vietnam to continue its economic growth it will require the step from simple manufacturing towards more complex industries and an increased role for supportive industries. The country's ambition to increase the local share of shipbuilding production from 30 percent today to 60-70 percent fits in this picture. Until now Norway has been the only country with donor support specifically targeting the shipbuilding industry. While the support of training programs is highly appreciated, it can be made more effective in terms of incorporating the training outcomes into business practices of the Vietnamese companies.

SWOT analysis

The main Strengths for Vietnam's shipbuilding industry are based on the country's vast labour force available at low wage levels and the government's commitment to developing the sector. Industry weaknesses relate to the poor management skills, extending to yard management, supply management, financial management and market strategy. Each of these areas may be affected by institutional factors, especially the strong political interference in the sector. Educational weaknesses concern the weak development of practical skills and the lack of independent thinking among graduates. Market opportunities are found in the offshore sector and the repair industry, as well as in the fact that Vietnam's economic growth will cause an increased demand for domestic coastal shipping.

Threats for the sector relate to general factors such as corruption, but also to industry-specific factors like the reputation of yards when failing to meet expectations of completing orders. The most important threat however is external, namely the weak market for newbuilding worldwide.

Areas of potential collaboration

The following areas have been identified as areas that could benefit from collaboration between Vietnam and Norway:

- Education and training: past experiences can be continued with some modifications, and additionally collaboration through existing education institutes. Norad could be instrumental by maintaining its training support, adjusting this on certain parts.
- Research & Development: to enable shipyards to build more complex ships, the R&D possibilities need to be enhanced. Norwegian companies with skills in the relevant fields could provide the necessary components and knowledge transfer.
- The setting up of manufacturing facilities by marine equipment suppliers helps Vietnam to increase the local share in production. Several Norwegian companies are already active in local production or its investigation. Various business models exist, each having its advantages and disadvantages.

Business opportunities

Multiple opportunities for cooperation exist, both in supplier-customer relationships and in participating in joint production. Examples include the joint setting up of manufacturing facilities for marine equipment or design development or the exploration of green shipbuilding options. Risks (business/commercial, technical as well as administrative/regulatory risks) need to be taken into account.

Role for Norad

It is recommended that Norad continues its assistance in training programs. This could be extended and made more widely accessible through cooperation with Vietnamese education institutes in addition to or instead of direct in-company training. Furthermore Norad can support governmental institutions in capacity building, especially with regard to their interaction with industry.

1 Introduction

Background

There are two main reasons underlying the request of the Norwegian Agency for Development Cooperation (Norad) to conduct a study into the Vietnamese shipbuilding industry:

1. Vietnam is one of the nations that have entered the shipbuilding stage in the past decade, together with countries like Brazil, India and the Philippines. Vietnam appears to be the most successful of these new entrants and has risen to become the fourth largest shipbuilder after Korea, China and Japan. The country, however, still faces a number of challenges related to investments, knowledge development, labour market, etc.
2. Norway has a long history in shipbuilding and is today one of the leading nations in specialised fields, such as the offshore sector and cruise ships. The country has a modern industry with a strong focus on marine equipment, research and high technological standards, as well as several high skilled institutions with relevant competences and experiences to share. These assets may be useful for the further development of the shipbuilding sector in Vietnam. Norwegian companies may benefit from this opportunity by expanding their networks.

Study Objectives

The objective of the study is to assess the Vietnamese shipbuilding/maritime industry and identify strengths and weaknesses along the value chain, including the political and institutional framework, the research and education capacities, and the commercial sector.

The study should further assess the future potential, and identify possible areas where Norway may contribute to enabling the Vietnamese shipbuilding sector to contribute to the country's economic growth and wealth building – either through institutional capacity building for addressing structural weaknesses, or through commercial cooperation.

World shipbuilding background¹

Shipbuilding was dominated by Europe at the beginning of the 20th century, holding a world market share of about 80 percent. In the 1950s, this position was gradually taken over by Japan, mainly due to a rapid growth of the Japanese economy and a coordinated shipping and shipbuilding program. By the early 1970s, Japan and Europe still dominated the world market with a combined share of about 90 percent.

¹ Section based on ECORYS' Study on the Competitiveness of the European Shipbuilding Industry, 2009.

Europe's dominant position was taken over by Japan in the 70s ...

.. which in turn was surpassed by South Korea at the beginning of this decade...

In the early 1970s, South Korea entered the stage. The country offered lower wages than Japan or Europe and chose to position shipbuilding as a strategic industry. Just as Japan did before, a carefully planned industrial program was successfully initiated, leading to a world market share of 25 percent by the mid-1990s and a leading global position as of 2005. Although China had maintained shipyards since the 1940s, it only became a dominant player during the last 10 years. The country's economic boom together with the strategic choice to develop heavy industry activities has led to a strong increase in global market share. China, together with Korea and to a lesser extent Japan, now dominates the world stage. In the mean time, Norway has risen to be among the top three European shipbuilders (in production value), mainly specializing in cruise and offshore vessels.

...and China entering the stage 10 years ago

India, Vietnam, Philippines and Brazil are new players

New players are entering the stage. Over the past five years, India, Vietnam, the Philippines and Brazil have acquired substantial orderbooks and have become larger players than most European countries. This rise can be attributed, to some extent, to the recently ended shipbuilding boom and to Korean or European yards investing in facilities in these countries, as a means to combine their own high level skills with the relatively low cost of labour. Among these newcomers, Vietnam appeared to be growing the fastest. In 2008, Vietnam became the 4th largest shipbuilder in the world in terms of orderbook, before players like Germany, Italy and India. The Vietnamese orderbook consists mainly of bulk carriers and tankers.

A specific segment is the repair and conversion industry. While the global fleet has expanded, and technology has become more complex, this segment has also gained in importance. Location is important and most repair centres are located near major shipping routes. Although not yet a global player, yards in Vietnam may further benefit from a long coastline along the major routes from north east Asia to Singapore and onwards towards the west. In particular, VINASHIN has ten shipyards with repair facilities for ships of 10.000 dwt or above. Furthermore, numerous small yards are focussing on repair of small inland-water vessels.

Increased role for marine equipment manufacturers

The role of marine equipment manufacturers has become more important over time. Originally most of the shipbuilding work was carried out at the shipyards themselves. With technological advances, the role of marine equipment industry – as the supply industry to the shipyards - has increased dramatically. While in the 1970s most of the shipbuilding work was carried out at the shipyards themselves, nowadays the share of marine equipment is assessed at 50-70 percent of the product value, and can be 70-80 percent in the more specialised segments. Close ties between equipment suppliers and shipyards therefore exist. The international position of Norway in terms of exporting marine equipment was ranked third in the world in 1998², which makes it an important player.

Shipbuilding is a cyclical business which was already entering its next down cycle

Shipbuilding is a highly cyclical industry. Even before the current economic and financial crisis, global shipbuilding industry was entering its next downward cycle. This was driven by the strong demand in the last years, accompanied by a strong expansion of shipbuilding capacity worldwide that resulted in a mismatch between capacity and

² Source: BALance Technology Consulting, 2000. No more recent data are available.

demand. The downward trend was further aggravated by the economic and financial crisis.

... before the current economic crisis hit the sector

The economic crisis started to become visible with a sharp decline of new orders starting in Q3 of 2008. By Q4, virtually no new orders were placed worldwide. This low demand persisted in 2009. In some segments the decline observed is larger than in others. Especially dry bulk, tanker and container segments are hit hardest. Those are the segments dominated by Asian manufacturers. Since the start of the crisis, the influx of new orders to Vietnamese yards has virtually stopped. With some small exceptions, no new orders have arrived. Moreover, substantial parts of the existing orderbooks have been cancelled by clients or delayed. The result of this is that Vietnam lost one place to the Philippines in terms of total orderbook, now ranking fifth in the world (see annex 6).

Set-up of the report

In chapter 2 of this report an overview is given of the Vietnamese maritime industry. This covers both a description of the sector itself and of the enabling environment. In chapter 3 an the donor involvement in the sector is described. In chapter 4 the results of the SWOT analysis are highlighted. The report concludes with chapter 5, in which possible areas of cooperation are identified. The results of the commercial/market assessment and inventory of specific business opportunities are also discussed in this chapter.

Sources of data

The study is based on three input components:

- Desk study (available literature, statistical data)
- Interviews with main stakeholders and site visits to shipyards in Vietnam
- Contribution of Innovation Norway's Hanoi office that investigated market and commercial issues.

A literature overview and a list of organisations interviewed are included in the annexes.

2 Vietnamese Maritime Industry

2.1 Introduction

This chapter elaborates on the Vietnamese shipbuilding industry and its supplier base. The objective of this is to give an overview of the state of the art of the sector in Vietnam, from which opportunities can be derived in the subsequent chapters. First the enabling environment is assessed (section 2.2). A description of the sector breakdown is then given in section 2.3.

2.2 Enabling environment

For an internationally operating industry such as the shipbuilding and maritime industries sector, the enabling environment is of high importance. This section goes into the political framework (2.2.1), the institutional framework (2.2.2) and the educational system (2.2.3).

2.2.1 Political framework

Doi moi opened up
Vietnamese economy

Vietnam has been a centrally planned economy since its independence and has only opened its economy to foreign investors and trade partners about two decades ago (the ‘doi moi’ or renovation policy started in 1986). Since then Vietnamese authorities have been committed to increased economic liberalization and enacted structural reforms needed to modernize the economy and to produce more competitive, export-driven industries.

Over the past 10 years the country has achieved impressive growth rates (between 5 and 9 percent³). It entered the regional country partnership ASEAN in 1995 and WTO in 2007.

³ Source: CIA World Factbook

The shipbuilding industry is one of the priority sectors for the Vietnam government. It is attached to the development of the overall maritime shipping objectives laid down in the Prime Minister's Decision No. 1601/QĐ-TTg of 15 October 2009. The latest master plan for the shipbuilding sector⁴, which is based on this decision, mentions the following policy objectives:

- a) To build and develop the shipbuilding industry of Vietnam (including all the ship building and repair yards and the supporting industry) to meet with the socio-economic development demand of the country, to strengthen security and defence and, at the same time, to meet the need for development and renewal of the national fleet and to have products for exports. By 2010, this should bring the Vietnamese shipbuilding industry to a medium advanced level in the region.
- b) To increase the quality of new building and repairs, with a focus to produce ship equipment and parts and increase the local content to 60 percent for new buildings by 2010.
- c) To develop and improve infrastructure and renovate the training and research capacity in order to achieve self-provision of technical matters such as designs, certification and new buildings for bulk vessels up to 50,000 DWT.

Other areas are propellers, deck equipment, secondary materials and pipes.⁵

According to the master plan, government support aims at increasing the local share of production by:

- Building a new facility to produce steel plates in Cai Lan (Quan Ninh), with a capacity of 250,000 tons per year including high load steel.
- Building a facility to manufacture diesel engines up to 6,000 HP in An Hong (Hai Phong)
- After 2010, to build a new shipbuilding complex in Binh Chanh (HCMC) or in Long Son (Vung Tau) to assemble diesel engines, and manufacture shipbuilding equipment.

Other areas are propellers, deck equipment, secondary materials and pipes.

Specific ambitions set concern the size of the fleet (to increase from the current 4.5 mln dwt to around 11.5-13.5 mln dwt in 2020) and to reduce the average age of the fleet to around 12 years.⁶ These targets are also relating to the country's transport strategy which aims to increase the share of shipping in the freight transport as well as the passenger transport sector.

The policy for shipyards is structured by region (north, centre and south) and further distinguishes VINASHIN yards, navy yards and other yards, that can be both local or foreign operated.

There are strong links between the Vietnamese government and enterprises in the shipbuilding and maritime sector. Major organisations such as VINASHIN (covering about 70-80 percent of the country's shipyard capacity)⁷ and VINALINES (shipping

⁴ Decision of the Prime Minister No. 1601/QĐ-TTg of the Government, approving the planning for Vietnam sea transportation development until 2020, with a vision until 2030.

⁵ See annex 6.

⁶ Source: Speech of the Vice Chairman of VINAMARINE, Mr. Do Duc Tien, to VietShip exhibition & conference, March 2010

⁷ Source: Presentation of VINASHIN to VietShip exhibition & conference, March 2010

Ambition to increase local equipment content

Strong links between government and state-owned enterprises

company with about 150 vessels in operation)⁸ are state-owned and also several state-owned banks active in the sector exist.

As the population growth has led to a growing labour force, the Vietnam government seeks ways to create jobs. The government has prioritised certain sectors for economic development, of which the shipbuilding sector is one. The shipbuilding industry is an important sector from the point of view of employment (directly about 100.000 jobs⁹ and indirectly up to 1 million may be created¹⁰).

One of the policy components laid down with the main shipbuilding companies is to increase the share of local content in the production of vessels. While today the largest part of equipment needs to be imported and the local contribution mainly covers the labour component, it is the ambition to increase the local share to 60-70 percent. This requires vast investments in the local capacity for producing machinery and steel components (see also annex 6).

2.2.2 Institutional framework

The following institutions carry responsibilities towards the shipbuilding industry in Vietnam:

- Ministry of Transport
- VINAMARINE
- Vietnam Register
- VINASHIN
- VINALINES
- Ministry of Industry and Trade

Ministry of Transport

The Ministry of Transport is responsible for all transport modes, including shipbuilding. It is in charge of overall national transport planning and to ensure that local and provincial infrastructure development are in accordance with the national transport plan. Under the ministry several specialised management agencies are residing. For the shipbuilding sector, most relevant in this case are VINAMARINE and Vietnam Register. Furthermore the ministry also carries administrative responsibility for several education institutes including Vietnam Maritime University (VIMARU). The ministry has assigned policy preparatory and implementing tasks to VINAMARINE. These organisations are therefore assessed separately.

VINAMARINE

VINAMARINE is the implementing agency for shipbuilding policies under the Ministry of Transport and responsible for preparing policy plans and legislative proposals. The ministry has assigned them to develop and implement policy plans for this sector. The

⁸ Source: interview + Lloyds Register/Fairplay ship database

⁹ VINASHIN states to have about 75,000 staff (see annex 5) and covers about 70-80 percent of total Vietnam shipbuilding capacity. This would imply that the overall total employment is around 100,000.

¹⁰ Source: Interview Danish Embassy

current master plan will end in 2010 and the organisation is now preparing a new plan for the period 2010-2020 with an outlook to 2030. Evaluation of the past period has not taken place yet.

Furthermore VINAMARINE is responsible for

- Managing the Vietnam Register and define standards & approvals
- Supervise the implementation of legislation by others
- Support VINASHIN in safety & security

VINAMARINE has recently been supported by JICA (Japan) in technical assistance for evaluating the status of the seaports and designing future development plans.

Based on the interview held with VINAMARINE consultants have the impression that technical skills of the organisation's staff are of sufficient level. However their knowledge of day to day operations in the sector appears to be limited. Better interaction between companies and the authority might be suggested to overcome this. Furthermore VINAMARINE itself expresses the desire for training to increase their knowledge of the shipbuilding sector.

Consultants have the impression that while ambitious plans for the future are being developed thoroughly, the underlying basis of evaluating past performance and considerations of global shipbuilding demand is not taken into account sufficiently. This may result in very optimistic government set targets for the sector that the industry can hardly realise. Manpower planning seems to be a good example of this. It would therefore be useful to improve the dialogue between companies in the sector, at an individual company level, and the policy developing organisations like VINAMARINE. It seems that there is a disconnection between the two.

Norad might be able to assist VINAMARINE in this in a form of technical assistance in the area of shipbuilding policy development, similar to what JICA has done for seaports (although the details of the latter have not been assessed by the consultants).

Vietnam Register

Being an agency under the Ministry of Transport, Vietnam Register is responsible for technical inspection of ships as well as other vehicles (road, rail). They perform design review and approval, classification of newly built ships, survey and registration.

The table below presents the share of vessels under Vietnamese control (e.g. having Vietnamese flag, ownership or management) that is built at Vietnamese yards versus yards elsewhere. It also shows the percentages of the orderbook. For comparison, the same data is also given for the Norwegian and Dutch fleet.

Table 2.1 Share of fleet built at local vs foreign yards

Country of ownership ↓	In operation		On order	
	Home country	Other	Home country	Other
Ship built at yard →				
Vietnam	62%	38%	83%	17%
Norway	40%	60%	28%	72%
Netherlands	53%	47%	38%	62%

Source: Lloyds/Fairplay world fleet data, October 2008, covering only vessels larger than 100 GT. This means small vessels and service vessels like tug boats are largely missing. It is noted that Lloyds data are not fully matching Vietnam Register data.

The table shows that of all vessels in operation with Vietnamese parties, a share of 62 percent was built at Vietnamese yards. In Norway and the Netherlands this figure was lower.

Looking at new orders made by owners in the respective countries, 83 percent of the Vietnamese ship operators have ordered at yards in Vietnam. This suggests that local owners see increased benefit in ordering locally rather than abroad. In Norway and the Netherlands the trend is opposite: a much smaller share is ordered locally and larger shares are ordered abroad.

The next table shows the same data, but from the perspective of the shipyards. It indicates which share of ships built at yards in the country is currently owned or operated by companies also located in the country, or elsewhere. In the right column, the origin of new orders is given.

Table 2.2 Ownership of vessels built at Vietnamese yards

Country of shipyard	In operation		On order	
	Yard country	Other	Yard country	Other
Owners located in →				
Vietnam	93%	7%	27%	73%
Norway	42%	58%	54%	46%
Netherlands	25%	75%	26%	74%

Source: Lloyds/Fairplay world fleet data, October 2008, covering only vessels larger than 100 GT

If we look at the vessels that were built at Vietnamese yards, 93 percent is now in operation with Vietnamese parties and only 7 percent is operated by foreign parties (see table above). However if we look at the orderbook, a much larger share of 73 percent concerns orders of foreign account. This implies that the yards have made a shift towards less dependency on the local market. This trend is not seen in Norway or the Netherlands, where the largest share of vessels in operation was purchased abroad, and only small changes in this when looking at newbuilding.

More detailed analysis showed that there is not much difference between flag and operator: if operator is Vietnamese, in most cases the ship also sails under Vietnamese flag. This is not the case in Norway or the Netherlands, where more often foreign flags are used.

The main interest of Vietnam Register could be in the area of enhancement of quality levels of shipyard output. The orderbooks of shipyards are not likely to recover to 2008 levels very quickly, and the owners still purchasing in the market are likely to be keener on quality. If the ships are not the best quality (they may be acceptable to Classification but not have the longevity required) then it will be more difficult to sell.

VINASHIN

A distinction is to be made between shipbuilding activity developed under the state-owned conglomerate VINASHIN and privately owned shipbuilding and marine equipment companies. The latter are mainly foreign-owned or co-owned enterprises. VINASHIN (Vietnam Shipbuilding Industry Group) is owned by the Vietnamese government. While the shipbuilding sector as a whole is under responsibility of the Ministry of Transport, VINASHIN directly reports back to the prime minister's Government Office. In section 2.3 VINASHIN activities and market role are described in more detail. From an institutional perspective it is relevant to note that the government is supporting VINASHIN through financial incentives, such as the provision of soft loans to transfer into a modern industry that meets future quality standards and the advantage of retaining corporate income tax for re-investment. Furthermore the government covers up to 50 percent of the working capital of state owned enterprises.

VINASHIN has several joint ventures with other (partly foreign) companies, both in the areas of shipyards (e.g. Hyundai) and in equipment production (see also section 2.3 and annex 6).

Institutionally the consultant's main concern regarding VINASHIN are their close ties to the government. This hampers the commercial operations of the company and might on the long run weaken its position towards foreign commercial competing shipyards. Interventions by the government for e.g. supplies or the delivery of certain vessels to state-owned shipping companies may affect the company's ability to meet agreements made with non-state owned (incl. foreign) clients. Furthermore the organisation is active in many other sectors which may affect the focus on core activities in the shipbuilding field. VINASHIN would be more effective if the shipbuilding element is separate.

VINASHIN may also direct orders to specific shipyards, rather than allowing its individual shipyards to compete for an order. This direct allocation will allow less efficient shipyards to continue in operation and remove incentives to improve productivity. A prior example of central control would be British Shipbuilders around 1980, where weaker shipyards of the group remained in business, and this damaged the stronger ones.

Other areas of development for VINASHIN lie in the commercial/business and operational field and are elaborated in section 2.3.

VINALINES

Vietnam National shipping Lines (VINALINES) is a state-owned company operating seagoing vessels. Similarly to VINASHIN it is regulated and financially backed by the government. In the country's strategy plans for the maritime sector the company is explicitly mentioned to become the core in ocean shipping, logistics, support services and

seaports, in the same way as VINASHIN is the core company within the shipbuilding sector.

Institutionally VINALINES bears the same risks as VINASHIN due to its close ties to the government. One example is that the company is now more or less forced to buy ships from VINASHIN that have been cancelled by foreign owners. As the company does not need these ships now – the shipping market is relatively weak – it poses a major financial burden on the company.

Ministry of Industry and Trade

The Ministry of Industry and Trade is responsible for industrial development. This also covers the supply industry to the shipbuilding sector. As the policy of the Vietnam government is to increase the share of local content in the shipbuilding sector to 60-70 percent (compared to some 30 percent today), substantial investments in the development of the supply industry are required.

This ambition of increasing the local content is potentially very positive for the Vietnamese economy, as it will increase the benefit for Vietnam compared to the current imports of equipment. However to realise this substantial investments are needed and it is feared that the government does not have enough funds to support this. Private companies will need to invest in facilities in Vietnam. Due to the current lack of knowledge in the more specialised areas of equipment supply, the only way to realise this ambition is by having more extensive involvement of foreign investors in Vietnam. Certainly Norwegian marine equipment suppliers like Kongsberg, BMS Davinci, Brødrene Dahl or John Gjerde could play a role here. From the Vietnamese perspective, foreign involvement in local production should be stimulated by reducing any entrance barriers as much as possible.

The interest of foreign suppliers in setting up in Vietnam was low, as the consultants found in multiple interviews held. Given the relative size of the industry in different Asian countries, Vietnam can be supplied from established regional bases, limiting the need for a local facility.

Furthermore, owner specified equipment is common, so supplies from outside Vietnam may still dominate where orders from foreign owners are concerned. A policy requiring local content for ships might encourage supplier investment as a “stick” demanding a certain percentage of inputs to be purchased locally, to place alongside the “carrot” of easier access of foreign investors.

Government support to the shipbuilding industry

Besides specific support to VINASHIN as mentioned above, the shipbuilding sector as a whole is assigned a priority sector by the national government. Several financial incentives are in place, such as:

- Exemption on export taxes
- Refund/exemption of import tax for imported equipment and material that is used on exported ships
- Restrictions on second hand ship imports, as a measure to enhance the attractiveness of local purchase.

It is clear that financial incentives given by the government have contributed to the capacity growth and capability increase of the sector in the past years. On the other hand it has also posed a financial burden on the sector which may hamper the industry in the coming years if market conditions remain weak.

Nevertheless, the shipbuilding and maritime industry receives highest priority from the government. A number of favourable regulatory legal documents in terms of financial incentives have been developed to support development of the shipbuilding and maritime industry.

Summarising, based on interviews both with public organisations and private companies, the consultants have concluded that from the institutional perspective, main concerns are the following:

- A weak link exists between VINAMARINE and industry; limited knowledge of current state of affairs, which causes a gap between policy development and implementation.
- VINASHIN and VINALINES are both state-owned and highly influenced by government, which hampers their financial performance and puts financial and managerial risk to the company that cannot be covered by normal commercial operations.
- Ambition of increasing local content is in conflict with the requirements of owners for certain foreign equipment to be built in their ships. Realisation of the objectives would require much more involvement of foreign suppliers in local equipment manufacturing.

2.2.3 Education and research sector

All the organisations consulted during the field visit to Vietnam identified the provision of properly qualified and trained personnel as a key element in the successful development of the shipbuilding industry. VINAMARINE identified this as part of their development master plan, with an aim to have about 16 percent of shipbuilding employment at the level of university graduates and post-graduates, 74 percent at the level of technical workers education and about 10 percent short-term workers. When asked, however, VINAMARINE staff could not provide figures on the current situation.

Well skilled workers but
lack of management
expertise

The VINASHIN shipyards have relatively modern facilities as a result of their investment programme in hardware. The manual workforce is considered to be skilled and capable of adequate quality, especially in steelwork. However, there is a serious problem with a lack of management expertise. It may be said that the expansion has gone beyond the capability to manage the numbers and scale of activity. Further education and training is needed for supervisors and managers.

There is a large maritime education sector in Vietnam to provide the necessary personnel. The information provided indicates a total of around 100,000 students across the country in a wide range of maritime disciplines. Vietnam has five universities that offer naval architecture and related courses.

These are:

- Hanoi University of Technology (HUT)
- Vietnam Maritime University (VIMARU) Haiphong
- Ho Chi Minh City University of Transport (HCMUT)
- Ho Chi Minh City University of Technology
- Nha Trang University (NTU)

In addition, the Hanoi University of Transport provides training in maritime transport. Other higher education facilities delivering courses in technical fields related to shipbuilding are also located near the main centres of industrial activity. They include the following institutions:

- Maritime College Number 1
- Haiphong Polytechnic College
- Maritime Vocational College Number 2

There seems to be a disconnect between the ability of local universities and higher education institutes to take on more students, the associated need of the industry for these when they graduate, and the limitations placed on the universities and higher education institutes on recruitment. This indicates the need for a better manpower planning arrangement between VINAMARINE, VINASHIN and the individual shipyards.

Specific information was gathered from VIMARU in Haiphong. The university offers 20 majors in primarily maritime disciplines. They collaborate extensively with universities around the world (including Belgium, Netherlands, France, UK, and Spain). Teacher's exchange is taking place with several universities as well (Denmark, Japan, Korea, China).

There are 2,100 staff teaching more than 27,000 students in 20 disciplines, including naval architecture and shipbuilding. The latter faculty has 2,300 students and 84 teaching staff. Degree programmes run over four years. Most naval architects are finding employment. Some decide to work overseas, e.g. in Singapore, Korea.¹¹

The university has to justify the numbers of students it educates, as a state owned institution. There is a numerus fixus on student positions and they have around 9 applicants for each place so it is very competitive and they could take on more students if allowed. However, there are no provided targets for graduate numbers. There is little collaboration by companies in education, for example, by providing internships. Many companies carry out their own training. Some short courses are provided by VIMARU and these may be paid for by companies requiring the training.

Strengthening of training programs needed

A number of issues relevant for shipbuilding can be identified with respect to the training and education system:

- Overall the provision of education and training seems to be uncoordinated. A number of the organisations consulted identified education and training as a key requirement for the successful development of shipbuilding.

¹¹ Based on data received from VIMARU.

- Setting specific targets in terms of numbers, disciplines and the skills, in particular management and supervision, which are required.
- Reviewing programme content and delivery to see that industry needs are met.
- Strengthening the programmes where necessary.

Further, regarding the university, research conducted in institutes such as SSTI and VISEC is relevant to mention. While both are active in developing designs, testing and quality surveys provide a basis for knowledge development. In an interview with VISEC it was revealed that investments in research facilities such as a testing basin and design models are planned.

VIMARU has a good staff to student ratio and prides itself on the discipline of the students. The impression is that the main focus is on sea-going staff, where discipline is of major importance.

However, the shipbuilding engineer needs to be imaginative and flexible in his approach to problems. Problem solving ability is a good description of a key skill, alongside obvious technical ability. Experience of Asian students in general is that deference and following procedures is an inbuilt trait. European Universities and higher education institutes emphasise problem solving skills through project work and “open-ended” assignments.

Engineers have to be creative and this is an element that seems – from admittedly limited discussions in Vietnam by the consultants – to be missing. Building this element into programmes could be a benefit.

Other observations are that information on current international developments, best practice and general reference material may have limited availability for the students. Support in terms of reference materials and other information, including seconded experienced engineers, may be a simple and effective provision of support. Longer term support in educational programme development would be beneficial.

2.3 Sector breakdown and main elements

Overview

Over the last years, the Vietnamese shipbuilding industry grew dramatically. Vietnam currently ranks fifth in Asia in terms of orderbook after China, South Korea, Japan and the Philippines.¹² However, in output their ranking was lower, around the tenth position. In general, Vietnamese yards produce bulk carriers, tankers and multi-purpose vessels. Nevertheless, about 70 percent of the total Vietnamese orderbook consists of bulk carriers.

Vietnam has developed around 150 shipyards, of which only 44 shipyards have exporting capacity. Vietnam Shipbuilding Industry Group (VINASHIN) is the largest shipbuilder in

¹² Source: Clarksons/CESA

Vietnam, owned by the Vietnamese government. VINASHIN has about 160 subsidiaries, including 39 shipyards and accounts for about 70-80 percent of total Vietnam shipbuilding capacity.

In Vietnam, the principle shipbuilding industry facilities are located in three geographic clusters: Southern, Central and Northern. According to Vietnam's existing expansion program, the Northern cluster will focus on containership and tankers of around 70,000 DWT – 100,000 DWT; the Central cluster on ships between 250,000 DWT – 300,000 DWT, and the South cluster on ships of around 30,000 DWT.

Contractual partnership (e.g. a contract between client and supplier for the delivery of specific goods or services) is the most popular business model in the Vietnam shipbuilding and maritime industry. Foreign orders play an increasingly important role in Vietnam shipbuilding sector and accounts for 60 percent of VINASHIN's order book.

There are also 100 percent foreign owned enterprises in shipbuilding/maritime industries in Vietnam, which include shipyards, equipment manufacturing facilities and mechanical service factories. At present, there are 5 foreign owned shipyards in Vietnam. In addition, the Joint Venture business model was typically used before the Law of Enterprises came in 2007. Before that law, Joint Ventures between foreign and Vietnamese partners enjoyed a number of privileges. This resulted in numerous Joint Ventures. Nowadays however there is no difference between this type of Joint Ventures or other structures.

VINASHIN

VINASHIN is dominant factor

The dominant factor in the Vietnamese shipbuilding sector is VINASHIN. This is a 100 percent state owned company which was founded in 1972 under the Ministry of Transport and Communications control. It was incorporated in 1996. It includes shipbuilding but also a lot of related (and some non-related) businesses. In its earlier development, Polish assistance was used through a technology transfer programme.

They have a joint venture since 1996 with Hyundai Mipo Dockyard, in which they have created a shipyard with two docks initially designed for ship repair. The JV has been successful, and the move to newbuilding has been managed effectively. Current construction capacity is of about 12 handy-max bulk carriers per year.¹³

In 2003 to 2005, there was very large expansion of their shipbuilding facilities. The government invested US\$ 750 million in new facilities and there were additional loans of US\$ 600 million, used for the expansion of shipyard capacity to accommodate the demand in the boom period between 2002 and 2008. Although this resulted in relatively modern facilities, the serious problem of lacking management expertise remains (see below).

As of 31 December 2009, VINASHIN had an orderbook consisting of 41 percent national clients, followed by clients from Israel (17 percent) and Norway (12 percent).

¹³ Source: interview VINASHIN.

Particularly, in the top ten VINASHIN customers are two Norwegian companies ranked third and fourth, Hoegh Autoliners and KGJS Cement A/S respectively.¹⁴

Productivity in shipyards is low

Other than at the Hyundai-managed joint venture shipyard, the productivity in the shipyards is low. The final quality of the ships is acceptable, but the production process involves a lot of re-work. The very low labour costs mean that despite the low productivity Vietnamese shipyards are cost competitive. On the other hand, the pace of construction is slow. So this is not reflected in the actual output, despite the large orderbook. The slow pace of construction has also resulted in cash flow problems with late-stage payments and some cancellations.

The shipyards have most of the facilities that are needed, with very little outsourcing. As a result there has been some over-investment, in for example shot-blasting and painting. A central plant for each region would have sufficient capacity for all the local shipyards in that region. In practice, each shipyard has invested in an under-used set of equipment.

Ambition to shift to more complex ships. Demand however is weak.

VINASHIN is considering building small product and chemical tankers, and focuses in general on specialised ships. This is seen as an alternative strategy instead of trying to compete with China for larger, simpler ships. Some shipyards may be moved onto ship repair work as a means of dealing with the poor shipbuilding market. In the current market and financial climate there is a poor cash flow and finance is a major problem for VINASHIN.

While the ambition of VINASHIN is to build more complex ships, it appears that its strategy lacks a focus on certain vessel types. It is generally known that developing yards need to start with building simple ships and gain experience before stepping to the construction of more complex ships.

Recently, there are increasing public concerns about VINASHIN's financial status, due to its policy of spreading investments over a number of sectors outside its core business. According to VINASHIN's financial report, by the end of 2007, the company's total assets are \$4.8 billion of which 91 percent was debt. Furthermore, 17 percent of VINASHIN's firm orderbook has been cancelled within 2008-2009. VINASHIN is now facing cash shortage and it is difficult for them to fulfil their obligations under signed contracts.¹⁵

Specific areas where VINASHIN needs to further develop to increase its productivity and financial sustainability are:

- Structural management procedures to be implemented in the company's business procedures
- Cash flow management
- Yard planning (including the use of more sophisticated means such as ERP software)
- Quality Assurance.

¹⁴ Source: Presentation VINASHIN to VietShip, March 2010

¹⁵ Based on annex 6 + various interviews.

Although the ships are completed to classification standards, alongside the improved planning there is a need to adopt quality procedures that avoid re-work. The pace of construction is painfully slow compared to competitors. Ships are built in timescales three or four times those of competitors. In the current market, this provides excuses for owner cancellations and also will inhibit new orders where speed of delivery is important.

The main focus of these four areas should therefore be to improve the production efficiency of the yards in order to increase profitability and reduce lead times.

Mainstream shipbuilding

A number of shipyards were visited during the field visit and the comments made are based on the visits and interviews with other stakeholders. Productivity estimated from the figures provided for labour force and output is around ten compensated gross tonnes (CGT) per man-year. This is less than one tenth of typical European, Korean and Japanese productivity.¹⁶ While low labour costs allow the Vietnamese shipyards to remain cost competitive, the low productivity results in a slow pace of construction.

The shipyards are aware of the low productivity and of the need for further training to address this. All the shipyards contacted have made some efforts to improve with overseas assistance in training, including from DNV and other Norwegian companies, co-funded by Norad. This has not always been effective, and it may be that the training has been carried out for too few people to allow them to make real improvements, in addition to the said lack of good management able to implement these improvements.

The shipbuilding equipment and facilities are sound, and in most cases relatively new. Current developments to increase capacity may not be completed because of the decline in demand. Ship designs are from overseas, because Vietnam does not have a good enough ship design capability.

One comment made in various interviews was that VINASHIN writes poor contracts, offering lower prices than it needs to, with poor payment terms. There are also in some cases debts to suppliers which may affect future supplies and therefore affect the yards' ability to complete contracts.

Shipyards which have more formal overseas input, whether as a joint venture or through ownership, are more productive than those that have not.

Ship repair

Some shipyards have a repair capability and other may turn to repair as the market for new ships is weak at the moment. Productivity is again low compared to more established countries. Low wages allow the shipyards to be competitive and the location on major shipping routes is good. From the visits the ship repair capability can be assessed as good. Upgrading of several of these yards is foreseen (see overview in annex 6).

¹⁶ Other estimates of productivity state that Vietnam levels are around 12 percent of that of Japan and 13 percent of that of Korea. See annex 6.

However, the value of ship repair contracts is low and the market has limits so it should not be seen as a full alternative to new construction. Ship repair would not sustain more than a small percentage of the current capacity.

In addition, there have been environmental issues related to repair (e.g. Hyundai-VINASHIN Joint shipyard was not operating according to environmental rules initially¹⁷).

Oil and Gas related shipbuilding

Oil & gas is a potential growth area

There is substantial work in progress in construction offshore oil and gas facilities. Fixed platform jackets and topsides are being constructed to support the industry. There is also a demand for supply vessels and other service ships. This part of the market is currently buoyant and will remain so while oil prices are relatively high. As with ship repair the offshore business will only support a small part of the shipbuilding capacity. In some cases the offshore companies prefer to construct new ships themselves or to order them abroad.¹⁸

There is an FPSO¹⁹ under construction in Vietnam so there is a capability to support the oil and gas sector. The pace of work is again slow and this may inhibit the market.

Fisheries

There is a substantial fishing fleet. As is the case with other local shipping, many of the vessels are old. There may be scope for new vessels but there is no hard information.

Ferries and coastal transport

There are numerous small ships and barges along the coast and on the rivers. Most of the shipping fleet appears to be of relatively old age. There may be scope for new construction but the market is fragmented and no hard information is available.

Marine equipment

Ambition to increase local content

VINASHIN includes a number of supply chain companies. Of the total cost of a ship built in Vietnam, around 40 percent consists of imported equipment, 30 percent of locally supplied equipment and the remaining 30 percent is labour cost (presumably including overheads). There is a strong wish to increase the locally produced content with respect to materials and equipment.

In many cases, local equipment content is limited by the owner specification, for example Norwegian owners requiring Norwegian equipment. Some of this is manufactured in and supplied by China. Because the Vietnamese industry is more recently established, there is limited local manufacturing to date.

A number of marine equipment supply companies were contacted (see annex 5). The majority of equipment is imported and the local companies are only engaged in the

¹⁷ Based on several interviews

¹⁸ It was said that PTSC is planning to have 60 new ships (offshore support) over the next 15 years, but intending to build these themselves. The two current small supply ships are Damen kits.

¹⁹ Floating Production, Storage and Offloading facility, being built by VINASHIN at its Nam Trieu shipyard in Haiphong.

import and distribution. The companies are both Far Eastern and European. Many have manufacturing bases in China (most commonly), in Singapore or other countries in the region. None expressed interest in Vietnamese manufacture. This implies that realising the Vietnamese ambitions may be rather difficult.

Reasons of manufacturers to locate in South-East Asia include the availability of a manufacturing base in the region. If they already have a base, there is no need for them to move to Vietnam. Also, the size of the Vietnamese market is modest compared to especially China. This means that if Vietnam intends to grow in the area of marine equipment, advantages of a location in Vietnam over facilities in China or elsewhere need to be stressed. Otherwise the ambition of Vietnam to realise a higher share of marine equipment supply can not easily be realised, due to the fact that manufacturers will prefer to deliver not only to a home market in Vietnam, but also to export.

Consequences of the crisis and overcapacity

Crisis will affect yards for several years to come.

The financial and economic crisis may have been the trigger for the decline in newbuilding demand, but overcapacity was already looming before that. Especially in the bulk carrier segments, the shipping capacity is substantially larger than demand for shipping this type of cargo. For Vietnam this implies that the crisis can have a long aftermath: as the country's yards are mainly involved in building bulk vessels, new orders may not be placed for several years. Ship operators that have laid up their vessels will take these into operations first before ordering new capacity. Until date the level of scrapping has gone up, but not as much as would be needed to bring demand and supply into balance again. VINASHIN states that it has sufficient orders to continue production until 2012, but this may be overestimated if tentative orders are being cancelled.

The consequence of this is that shipyards in the bulk vessel segments either need to be sufficiently prepared in order to survive the coming weak years or they need to divert to other segments where the imbalance is less profound. Attempts of the Vietnamese yards to go into the offshore segment are signs of this diversion. One successful example is the STX Vietnam yard in Vung Tau. For other yards, foreign expertise will be needed to successfully shift into offshore or other more complex ship segments.

3 Current Donor Status

Over the last years, Vietnam has received increasing support of donors parallel with the country's economic growth. This chapter gives an overview of the transition of Vietnam to a lower middle-income country. Furthermore the current status on donor aid to Vietnam and especially to the maritime and shipbuilding industry is provided.

3.1 Vietnam as lower middle-income country

Vietnam shifts to Middle Income Country

The Vietnamese economy has grown rapidly with an average growth rate of 7.6 per cent between 1991 and 2008. In 1990, Vietnam was among the world's poorest countries with a GDP per capita of US\$98²⁰. By 2008, with a GDP per capita of US\$1,024²¹, Vietnam has reached the threshold of a lower middle-income country using the World Bank classification method. Thus, Vietnam will have reached its goal of being a lower middle-income country in 2010.

Additional aid of donor organisations will be essential in the coming years. Martin Rama of the World Bank Vietnam²² identified four main challenges for donors after 2010 for Vietnam as low middle-income country:

- Move to non-concessional support
- Embrace country policy priorities
- Adapt flexibly to country systems²³
- Provide advice and capacity building

A questionnaire of the World Bank to donor organizations resulted in an overview of its expected grant and loan volumes between 2011 and 2015. The next figure provides both outcomes.

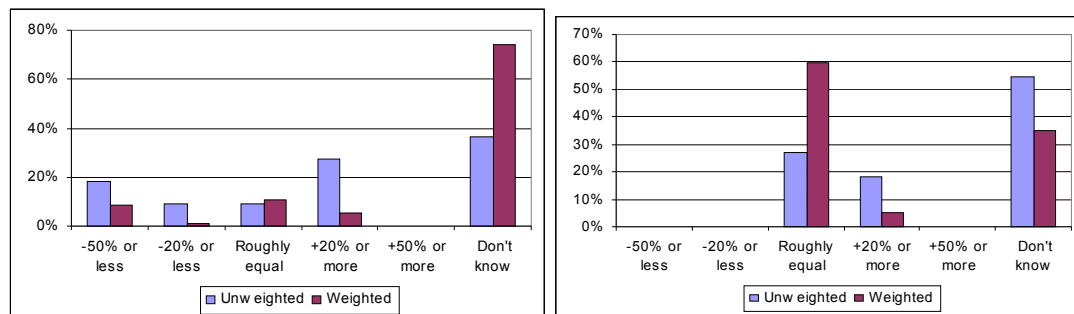
²⁰ Source: Asian Development Bank

²¹ Source: Kenichi Ohno, Avoiding the middle income trap: Renovating Industrial Policy Formulation in Vietnam, ASEAN Economic Bulletin Vol. 26, No. 1 (2009), pp. 25–43.

²² Source: Martin Rama, World Bank, Moving to Middle-Income Status: Donors and Vietnam beyond 2010, PowerPoint, February 29, 2008. A country receives the MIC status if its GDP per capita has risen above 1,000 USD for three years in a row (among other requirements).

²³ Under this challenge, Rama mentions more budget and program support, respect budget procedures, improve predictability of transfers, minimise special reporting requirements, and use/strengthen country financial management, results, and monitoring & evaluation systems.

Figure 3.1 Expected grant volume (left) and loan volume (right) in 2011 – 2015 compared to 2008



Source: Martin Rama, World Bank, Moving to Middle-Income Status: Donors and Vietnam beyond 2010, PowerPoint, February 29, 2008.

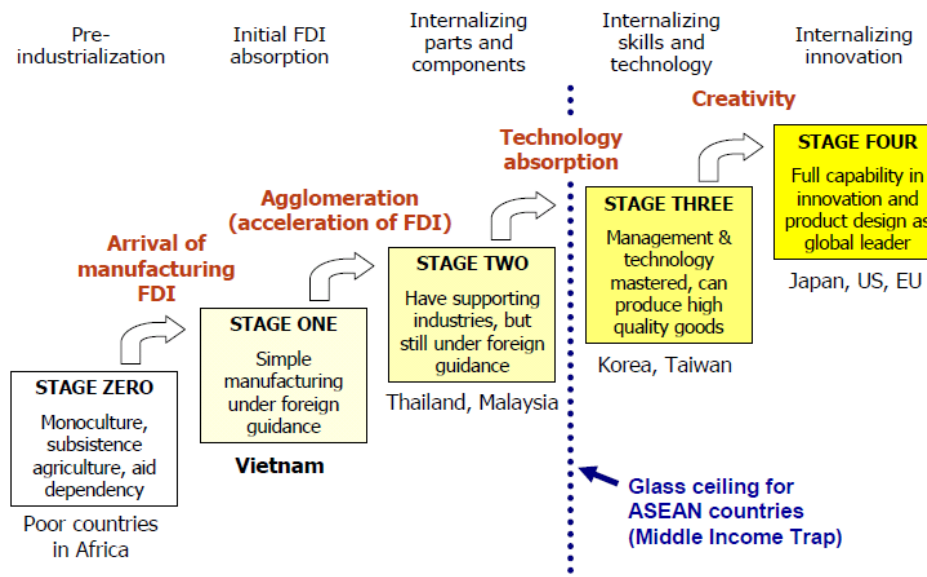
The left graph shows that most donors expect the grant volume to be reduced in the coming years. The right graph shows that at the same time they expect that the loan volume will increase. It should be noted that there are large uncertainty margins.

As shown in the next figure, an acceleration of FDI and donors will be needed to guide the country into the middle income status. However, a transition in policies and governance as well as internal value creation is also essential for the country to embrace the country's growth.

Transition needed to further raise development level

Figure 3.2 Vietnam and the middle-income trap

Stages of Catching-up Industrialization



Source: Kenichi Ohno, Avoiding the middle income trap: Renovating Industrial Policy Formulation in Vietnam, ASEAN Economic Bulletin Vol. 26, No. 1 (2009), pp. 25–43

Clearly the government's strategy for the shipbuilding sector to increase the local share in production by developing components manufacturing fits within the stage of

internalising parts and components. This should help the sector to enter the next industrialisation stage.

3.2 Donors active in Vietnam

There are a lot of donors active in Vietnam. Over the last year, the volume of donations became larger from all kind of organizations. The largest donations of 2009 are:

- World Bank Consultative Group (including World Bank, Japanese government, ADB and EU): US \$ 8 billion²⁴
- Japan: US \$ 830 million²⁵
- United Nations Development Program: US \$ 6.4 million²⁶

The main focus areas of donations are poverty and infrastructure. See the next box for details.

box 3.1 Description of main donations to Vietnam in 2009

During the World Bank's Consultative Group meeting of December 2009 it was agreed that Vietnam will receive approximately US \$ 8 billion of donor funding. Major donors of this Consultative Group constitute the World Bank (US\$ 2.5 billion), the Japanese government (US\$ 1.6 billion), the Asian Development Bank (US\$ 1.5 billion) as well as the European Union (US\$ 1.1 billion). According to the Group's statement the agreed amount is intended to stabilize the country's macro-economy, regain growth and further reduce poverty. Additionally, other key issues of concern are the increase in the economy's competitiveness as well as reinvigoration of the state-owned business model. Due to the fact that Vietnam has traversed the average middle income threshold of 1,000 \$ in 2008 (and thus will receive the middle income status by 2010 if this is maintained), key issues of concern in the past such as poverty reduction can additionally be complemented by investments into the country's infrastructure.

Moreover, in 2009, Japan promised an aid package of US\$ 830 million to Vietnam mainly aimed at infrastructure projects (highway construction, the erection of industrial parks). These measures intend to facilitate Japanese companies to conduct business in Vietnam. Japan is the largest contributor of development aid to Vietnam and is responsible for 30 percent of all donation of which 41 percent flow into the transport sector.

In 2009, the United Nations Development Program (UNDP) and the Ministry of Justice (MOJ) announced a five-year project providing US\$ 6.4 million to support the MOJ and related justice agencies in strengthening access to justice and rights protection for the poor and vulnerable in Vietnam. The UNDP in Vietnam mainly focused on the following areas in the past: Democratic Governance, Poverty Reduction, Crisis Prevention and Recovery, Energy and Environment and HIV and AIDS as well as Gender Equality.

²⁴ Source: World Bank, 4 December 2009. URL: <http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/VIETNAMEXTN/0,,contentMDK:22409917~menuPK:50003484~pagePK:2865066~piPK:2865079~theSitePK:387565,00.html>

²⁵ Source: Topnews website, 6 September 2009. URL: <http://www.topnews.in/japan-announce-new-development-aid-vietnam-2175795>

²⁶ Source: UNDP website, 6 Juni 2009, Press release. URL: www.undp.org.vn

3.3 Donation related to the Vietnam maritime / shipbuilding sector

Except for Norway, none of the donors focuses on shipbuilding specifically

The above donors as well as several bilateral donors were consulted on their support to the shipbuilding sector. Except for Norway, all of them responded that no donations specifically to the shipbuilding industry were given. While most donors do have support activities in the transport sector, these mainly focus on the construction and maintenance of transportation infrastructure rather than the transport equipment supply industries such as shipbuilding. Ports, waterways and roads are the most common elements.

Mentioned frequently was the Norad support to the shipbuilding sector, which appears to be unique in Vietnam. Norad has been co-funding a training programme prepared by DNV and other Norwegian companies, in which training is given to shipyard staff of VINASHIN on specific technical and management skills. Both institutional and private stakeholders indicate their appreciation of this support and suggest its continuation. Furthermore funding of scholarships to Norwegian universities and institutes is to be mentioned.

In addition to this Norway also has a business match making programme (BMMP) to enhance cooperation between Norwegian and Vietnamese companies. BMMP aims to facilitate partnerships between Norwegian and Vietnamese businesses through support for partner search, business plan development, advise on CSR issues, and give general advice on business in Vietnam.

Several other bilateral donors, such as Denmark and the Netherlands also have business support programs for industry cooperation. Until recently shipyards and marine equipment manufacturers could also apply to these programs for support. In Denmark the activities within shipbuilding supported so far were focused on the provision of management training and some scholarships for staff to train in Denmark. In the Netherlands the most important example was also in the area of education, although not for enterprises but through a cooperation between a Dutch and a Vietnamese education institute. Neither Denmark nor the Netherlands intend to focus on shipbuilding specifically in the future. In the Netherlands Business-to-Business program, shipbuilding manufacturing is not defined as a priority sector, but public transport infrastructure is.

Details on the government support from Korea could not be obtained.

Furthermore donors are supporting the government in institutional development, which in most cases does not focus on the shipbuilding sector specifically but certainly does help the sector along with other business sectors in the country.

Interest from other donors to cooperate

Both the Netherlands and Denmark did express their willingness to share views with Norway to ensure a high effectiveness and alignment of support. Activities in the area of education (if not limited to in-company support) appear to be the most promising.

4 SWOT Analysis

On the basis of the interviews and site visits held, and in discussion with Innovation Norway, the following SWOT table was drafted.

Strengths	Weaknesses
<p>General</p> <ul style="list-style-type: none"> • Huge, young labour force • Literacy rate • Repair location (geographically, along routes + multiple ports that can be accessed) • Long coast line <p>Market</p> <ul style="list-style-type: none"> • Oil & gas sector well resourced (money) • Coastal shipping demand <p>Industry</p> <ul style="list-style-type: none"> • New facilities <p>Institutional</p> <ul style="list-style-type: none"> • Government support/ambitions <p>Education system</p> <ul style="list-style-type: none"> • Skilled teaching staff available • High interest among students to join shipbuilding studies 	<p>Industry</p> <ul style="list-style-type: none"> • Financial position of VINASHIN • Poor management skills in (most of the) industry (incl. production planning) • Health & safety • No focus in product mix (just make anything that owners request) • Material management, storage & handling, logistics • Low productivity in shipyards (poor quality of production process including inefficiency) = management issue + skill issue (→ low benefit of labour cost advantage) • Cash management & pricing/commercial process • High level of supply import causes higher input costs • Low flexibility to adapt to market changes <p>Institutional</p> <ul style="list-style-type: none"> • Political interference in running operations • Long start-up time for new business • Knowledge gap between institutions and industry <p>Education system</p> <ul style="list-style-type: none"> • Practical skills insufficiently developed within education programmes • Study programmes insufficiently linked to industry needs • Education is also not developing engineers and managers who can think and act independently in sufficient numbers

Opportunities	Threats
<p>Market</p> <ul style="list-style-type: none"> Offshore platforms, support vessels and FPSO's (all oil/gas related sectors) – strength of Norwegian suppliers, esp. deepwater areas. Ship repair (location, capability, capacity, market need) Growing demand for domestic shipping (cabotage, fisheries, coastal patrol & rescue + need for fleet modernisation) (not investigated) Make use of available production capacity for supplies <p>Industry</p> <ul style="list-style-type: none"> Development of management and technical skills Development of marine equipment sector <p>Institutional</p> <ul style="list-style-type: none"> Marine equipment (political wish to enhance the local supply base) <p>Education system</p> <ul style="list-style-type: none"> High interest in (in-company) training programmes Norad/DNV Academy programme has a good name 	<p>General</p> <ul style="list-style-type: none"> Corruption Financial climate (more difficult/costly to get financing) <p>Market</p> <ul style="list-style-type: none"> Competition and poor maritime market Prolonged low level of new orders due to overcapacity in the fleet <p>Industry</p> <ul style="list-style-type: none"> Reputation due to not/unsatisfactorily completing ongoing operations (incl. unpaid suppliers) <p>Institutional</p> <ul style="list-style-type: none"> Import & export procedures difficulties Lack of government support <p>Education system</p> <ul style="list-style-type: none"> Leakage of knowledge: good students leave to work for foreign companies abroad

The main strengths for Vietnam's shipbuilding industry are based on the country's vast labour force available at low wage levels and the government's commitment to developing the sector. Furthermore the demand for vessel capacity from the oil and gas sector and for coastal shipping is an opportunity. The location of Vietnam along one of the most important international shipping routes is important for delivering repair services. Institutionally, the outspoken government support to the industry and the public objectives set are providing a strong basis for the industry. The education institutes have skilled staff and also have numerous (although sometimes outdated) training facilities available.

Weaknesses in the industry mainly relate to the poor management skills, both in yard management, supply management, financial management and market strategy. These all may be affected by the strong political interference in the sector. Consequences are the weak financial position of VINASHIN and the low productivity levels at most yards. In addition to a low level of local equipment supply, Vietnam only marginally benefits from its low labour cost advantage. The shipyards, supported by the government, have been active in investing in technology (hardware at low investments) but this has not solved the software problem (management skills). Education is insufficiently targeting practical skills of students, causing industry to deliver extra training for their staff before they can be assigned to work in their companies.

It is noted that strengths/weaknesses can be valid for Vietnam but should also be seen relative to competitor countries like China or Korea.

Opportunities are found in the offshore sector and the repair industry, as well as in the fact that Vietnam's economic growth will cause an increased demand for domestic coastal shipping. It is noted that the income from the oil and gas sector is declining because the sector is not active in deep water areas yet. For the shipbuilding sector this offers an opportunity as the current offshore fleet is not equipped to deep water operations. Institutional support to develop a marine equipment industry provides additional support for increasing the value added of the industry to Vietnam's economy. There is a high interest in training provided in-company, especially with the involvement of foreign expertise. The Norwegian programmes co-funded by Norad are widely known and appreciated.

Threats relate to corruption, which is a general concern for all sectors in Vietnam, to the reputation of yards not or unsatisfactorily completing orders but especially to the current weak market for newbuilding worldwide. The latter partly relates to the financial climate, but moreover to the overcapacity in the world fleet. An institutional barrier, next to the (perceived) complexities related to import and export, is the lack of funds to substantiate the government support of the sector.

From the educational perspective, a major risk is that high skilled workers leave for foreign companies, which means a leakage for the Vietnamese industry.

5 Areas of potential collaboration

In this chapter, areas of potential collaboration between Norwegian and Vietnamese industry, and between Norad and Vietnamese organisations is elaborated, based on the assessment of the Vietnamese situation presented in the previous chapters. First, in section 5.1 three fields where development is needed and where Norway could deliver support, are mentioned. Then in section 5.2, specific contributions of Norad and of Norwegian industries are described. Finally, business opportunities identified by Innovation Norway in Vietnam are summarised in section 5.3. Their main report can be found in annex 6.

5.1 Fields of development for Vietnam

Development in
education, training and
R&D

In this section, the main focus is laid on fields of development in which Vietnam needs to take further steps to bring its shipbuilding industry to a higher level. Specifically, areas are mentioned where Norad and/or the Norwegian industry can add value. Such areas include:

- **Education system.** Overall the provision of education and training seems to be uncoordinated. Relatively small numbers of staff and workers have received training from overseas companies, which is not always effective in improving productivity. A number of the organisations consulted identified education and training as a key requirement for the successful development of shipbuilding.

As a starting point it would be necessary to set specific targets in terms of numbers, disciplines and the skills required for the industry. This is particularly important for certain management and supervision which most contacts agreed is a weakness for the Vietnamese industry.

Having identified the requirements, the next step would be a review of the content and delivery of education and training programmes to see that industry needs are met. There is then potential for support to the programmes by providing staff training as an example. One contact identified a shortage of resources, in particular reference materials and books, in the higher education.

Strengthening the management and professional engineering aspects of education to form more future industry leaders is a final element that is recommended to give more attention.

Challenge

The main challenge with regard to developing the education system – including the way Norwegian companies and/or Norad participate in this – is to align the in-company training programmes to the Vietnamese education system. This implies better linking training programme contents to the study programmes offered at universities and other public education institutes. Furthermore practical in-company training could be integrated in regular education schemes so as to ensure an effective transfer of students from education environment to business environment

- **Availability of qualified labour.** The manual workers seem to have the necessary basic skills. Some comments were that training provision in the country is variable, and companies have to provide additional in-company training to bring the workers up to a suitable standard. Support for this is already provided through the DNV Academy, but could be increased.

Training in supervisory skills and also in quality assurance was identified as an area of interest. This has the potential to improve work organisation and reduce rework which would increase the production capability. The numbers are large and a sustained programme would be required. A “cascade” system with overseas assistance to train local trainers is likely to be the most effective structure.

Challenge

Norad and Norwegian companies could support in developing a shift from direct training to a train-the-trainers approach, which increases the reach of the programme to larger numbers of people trained. Such an approach could be set up in cooperation with existing education institutes. This is the only practical means of assisting in the formation and development of the large numbers of managerial and supervisory staff that are required. However it is always difficult to monitor the effectiveness of cascade training and a feedback mechanism would be essential, monitoring the way in which the students apply the new knowledge in the companies

This challenge should be seen in combination/coordination with the previous item. A specific intervention to add independence of thought and creativity to the engineer education programmes could be a valuable addition.

- **Research & Development:** in order to allow shipyards to build more complex ships, the R&D capabilities need to be enhanced. One of the fields is that of ship design and testing. Talks with VISEC (VINASHIN’s design company, an organisation formerly under VSSC, the country’s ship design institute) have shown that skills and development potential are in place, but a knowledge gain is required. Currently the organisation is trying to solve this through traineeships among foreign shipyards. (Korea, Japan), but Norwegian yards and suppliers could also play a role here. Another suggestion is to register to become the member of IACS. Establishing the technical and regulatory infrastructure in Vietnam will require substantial overseas input from similar organisations. This will inevitably take time, particularly to develop the senior staff and future leaders.

The setting up of manufacturing facilities by marine equipment suppliers helps Vietnam to increase the local share in production. Several Norwegian companies are already active in local production or investigating this. Various business models exist.

Challenge

The main challenge with regard to R&D is upgrade existing knowledge and skills among R&D people in Vietnam. Partnerships with skilled institutes in Norway (e.g. Marintek) could be instrumental in this upgrading process.

Research, Development and Ship Design capability

A number of interviews identified that there is a limited design capability in Vietnam. Vinalines would prefer ships designed overseas. The local yard STX Vietnam offshore Ltd. (owned by STX Europe (formerly Aker – 70 percent) and Amingo (Singapore-based, 30 percent)), the Hyundai-VINASHIN joint venture and the construction of small, service ships for the oil industry all use overseas designs.

The development of a sound ship design capability takes time. There are a number of requirements:

- Technology, in terms of computer aided design and supporting infrastructure
- Development of well trained staff
- Knowledge of rules and regulations and their application in ship design
- Experience and a track record
- The ability to test and demonstrate the suitability of designs, for example ship model testing.

The technology is straightforward to provide, although full scale computer aided design facilities are expensive. The providing the technical workforce with the basic skills is also not a difficult operation. However once the workforce is in place, effective ship design requires senior, experienced staff to lead the workforce and ensure the ship designs are suitable for the market. This will take time, and ideally selected personnel would be given overseas experience in a design organisation to create the future leaders.

Further staff development will also be required to provide specialist skills, for example in dealing with propulsion, vibration, and structural analysis. Some specialist areas in ship design can be problematic for well established shipyards. Some consideration will also have to be given to the structures, probably building on existing centralised organisations for basic design with detailed design completed in the shipyards. This would concentrate the specialised skills.

The ship design process requires good knowledge of the rules and regulations which apply to ships. These include Classification, Coastguards, other maritime authorities. Experience is essential and once again overseas experience is a potential way forward in establishing the required expertise.

The design organisation which is developed will have to establish a track record before it can expect to create designs for the international market. This may require some direction within the country to create designs for nationally owned ships.

The master plan for the development of the industry indicates an investment for two (state owned) research and development centres. These are SSIT in Hanoi and the transport design company in HCMC. The investment will include the completion of the model testing tank of international standard in SSTI. The provision of the physical facilities is only the starting point. There are examples of such facilities being seriously under utilised because of a lack of specialist staff.

As with design, overseas experience for selected staff is a way forward. It may also be necessary to employ expatriate staff to manage the facilities in the initial period of operations.

5.2 Roles for Norad and Norwegian industry

Based on the analysis presented above and especially on the interviews held with various stakeholders (see annex 5), possible roles for the Norwegian industry as well as for Norad have been identified.

Possible contributions by Norad

Given the limited resources available to Norad for supporting the Vietnamese shipbuilding industry and the fact that these will gradually be reduced with Vietnam becoming a Middle Income Country, the two main fields in which value added for Norad support is seen are:

- Training in the area of management capacity
- Capacity building for government institutions to enhance the implementation of policy plans and the application of regulations

Norad could continue training support...

With regards to **training**, virtually all stakeholders interviewed expressed their gratitude on the training support given to date by Norad. It is generally acknowledged that training is especially needed at the supervisory and management level of shipyards. Therefore continuation of this support would be beneficial to the industry.

...with some changes in focus

The starting point of training support can be the very successful Norad co-funded DNV-Academy training programme, in which also other Norwegian companies have participated. However it is recommended that some improvements are made to the current training support practice:

- First of all, a concern is that the sustainability of training results is weak. Although the knowledge and capability level of people trained has increased, the implementation of these gains into their organisation is difficult. There is no clear link between the training results of the past and integration of these into the company's operations, so it is not certain whether training support has delivered sustainable outcomes. This has to do with the limited powers of the trained staff to change operating practices within their company as well as with the fact that structural changes cannot be implemented by individual staff. On the other hand as the highest management of VINASHIN has also expressed their commitment to management improvements, a solution should be feasible. For defining training contents and selecting staff to be trained, it is recommended that discussions on these two items are held with the group management. To overcome this concern, it is recommended that:
 - Norad and DNV/other training experts start talks with VINASHIN management to agree on the main focus of training contents and VINASHIN's needs for implementing training results into company operations.
- Secondly, training support could be shifted from specific company training (e.g. DNV Academy's VINASHIN training programme) to wider accessible training support in which staff of other companies can also participate. Several stakeholders indicated that the vocational education system in Vietnam provides weak output, so that support from development agencies might also focus on this level instead of post-graduation in-company training. This could be organised through existing education institutes such as VIMARU or others where facilities and educating staff are already available. Previously considered plans of VIMARU which were also submitted to Norad could be used as a starting point for this. A combination of local training programs with scholarships at Norwegian institutes might be a model. Specific actions recommended are the following:
 - Norad discusses with the Vietnamese Ministry of Transport and probably also the Ministry of Education on adjusting education programmes to include some of the

practical components now organised under in-company training. Norwegian industry experts could participate in these courses as well as Vietnamese shipyard representatives.

- Norad and Norwegian companies should stress the need for internships at Vietnamese shipyards, supplier companies and if available also foreign companies based in Vietnam. Commitment from Vietnamese companies should be obtained.
- Thirdly, while the current training programmes foresee in the provision of short term training, additional value can be gained from longer term training programs. Several workers and middle managers interviewed mentioned high added value of traineeships at other yards and supplier companies abroad, where management skills were not just trained but practiced by them. A scholarship set-up in which Norwegian industries also participate could provide the necessary positions for such traineeships. As a specific action it is recommended that:
 - Norad in cooperation with Innovation Norway tries to commit Norwegian companies to provide ½ to 1 year internships in Norway at management level for selected Vietnamese operational managers.

The second area for Norad support would be **capacity building** among government institutions such as VINAMARINE. They are facing the challenge of developing policy for a sector which is becoming larger and increasingly complex. The development of new policy plans therefore also becomes more complex, not least because the number and variety of stakeholders to take into account is growing quickly. It is proposed that Norad discusses with VINAMARINE the specific fields in which direct benefits can be gained. This may depend on the stage of development of their policy cycle at the moment of these discussions.

For each type of support by Norad, it is suggested to seek cooperation with other bilateral donors. Both the Netherlands and Denmark have already expressed their interest. This may provide additional means to expand the scope of the training. The embassies in Hanoi are the main contact point for this coordination.

Possible role for Norwegian industries

The Vietnamese shipbuilding sector offers several business opportunities for the Norwegian industry. Partly these can be taken up in cooperation with Norad (involvement in training programmes), and partly it can be independent initiatives, or initiatives supported or coordinated through Innovation Norway in Hanoi.

First of all, for companies it is important to **maintain relationships** with Vietnamese partners in the coming years. The market situation will likely cause fewer contracts and less service work for Vietnamese as well as Norwegian companies, and several of the latter are already reducing their staff levels in Vietnam. Lower participation in VietShip 2010 as compared to the 2008 edition is also a signal of this. On the other hand, Vietnamese industry, supported by their government, will continue to develop. Maintaining relations will ensure a strong position of Norwegian partners once market demand increases again. It is therefore recommended that:

- Existing bilateral relations are continued, if not resulting in contracts then still at the level of frequent exchange of news on company's activities.

- Companies should continue attending/presenting at events such as VietShip
- Companies in the field of marine equipment supply should monitor others starting up production facilities in Vietnam (especially the VINOMARINE joint venture) in order to learn from their development and consider such a step themselves.

Secondly, companies should continue to **invest in training of staff of their Vietnamese counterparts**. Vietnamese partners are asking for this and several Norwegian companies benefit from their investment in training provision through the increased network of relations at their clients. The support of Norad could be instrumental in keeping their investment costs at a feasible level. Specifically:

- Norwegian companies with expertise in operational management and yard management (shipyards but possibly also owners) are requested to participate in training to Vietnamese yards/operational management staff.

As a third point, the use of business to business support via **Innovation Norway's Business Match Making Programme** can be used more. It turned out that not all companies were aware of the possibilities of this support programme. Those that do, indicated the skilled support of Innovation Norway in setting up cooperation with local partners and other aspects of entering the Vietnamese market. It is therefore recommended that:

- Innovation Norway increases its promotion of the BMMP among Norwegian companies active in the field of shipbuilding and marine equipment.

Norwegian companies, both in the area of shipbuilding and in marine equipment manufacturing, that want to establish business in Vietnam can consider various models. The following four categories were already found:

- Start up a new (fully owned) facility. This requires the highest investment level from the Norwegian side, but also ensures that operating structures can be easily aligned with other facilities of the company in Norway or elsewhere in the world. Successful examples of this category are ODIM (which is said to be taken over by Rolls Royce soon) and Ned-deck Marine from the Netherlands. Currently the Norwegian companies Jets, Libra and John Gjerde are in the start-up phase of setting up a new facility under the Joint Venture named VINOMARINE. Such initiatives are also supportive to the Vietnamese ambitions to increase the local production of marine equipment.
- Purchase existing production sites and invest in expanding or improving these. This model was followed by STX Europe (formerly Aker) to enter Vietnam. It may not always be feasible to follow this model, as existing facilities may not be for sale (for example if they are state owned). Furthermore the transformation of a Vietnamese organisation into a business, modelled along the Norwegian mother company may be challenging.
- An alternative to purchasing existing sites is to set up a joint venture between a Norwegian and an existing Vietnamese company. This will limit the investment needs for the Norwegian partner, but on the other hand it also limits the control of the Joint venture. The model becomes more complex if the Vietnamese partner is not an independent company but part of a larger company. This turned out to be one of the reasons for a supplier to move away from this model and buy out their Vietnamese partner (resulting in a fully owned facility as in the second category above). The Joint

Venture of Hyundai and VINASHIN in Nha Trang today is operating successfully but it also has had start-up difficulties, including the aforementioned environmental problems.

- Subcontract to a local supplier to deliver certain outputs. This model will limit the required investment from the foreign (Norwegian) party. If existing production facilities are already in place, these can be contracted to deliver certain products. In most cases, some training of the local company's staff and probably some investment in production equipment modification will be needed to equip the local company with the skills to deliver products according to the requested standard. As the availability of equipment facilities is still limited, chances for this model are limited on the short term. However as Vietnam aims at increasing its local supply, the possibilities for this model will increase in the coming years. In March 2010, one Norwegian company was investigating the feasibility of this model.

Of course the model chosen will be depending very much on specific circumstances and defined on a case-by-case basis. As there are Norwegian companies active using various models it is recommended that:

- Norwegian companies intending to start activities in Vietnam contact other companies already active to learn from their experiences (of course without disclosing commercially sensitive information).

It is noted that local opportunities for manufacturing should be not too far away from existing capabilities, to ensure that the knowledge/capability gap of local partners can be overcome.

Several segments where future demand will increase

Several new business segments have been suggested as areas where Norwegian suppliers could become involved:

- Ferries: both in the North and South of Vietnam, dense waterway networks are requiring ferry vessels for river crossings. Both these and coastal passenger transport will increase with the economic growth of Vietnam.
- Fishing vessels: with its 3000 km coastline, the fisheries sector in Vietnam can potentially be very large. Until now however it mainly consists of small companies with small vessels. The government's strategy on developing this sector may enhance the demand for larger sized and more complex vessels (including fish processing ships).
- Coastal patrol and rescue: finally, the long coastline, increased coastal traffic and existing regional disputes require the government to have sufficient patrol and rescue vessels available of modern design. As government funds are limited, however, the growth of this segment may be lower than market sectors. On the other hand, the existing naval yards offer substantial capacity to deliver the vessel types required for this segment.

While these are general areas of market development and no specific details on orders to come have been identified, it is suggested that Norad and/or Innovation Norway in Hanoi monitor these segments to identify upcoming orders timely so that Norwegian companies can be informed.

The focus of business activities in Vietnam does not need to be limited to Vietnamese demand only. Especially production activities in Vietnam could be used not only to serve

the local shipbuilding market, but also other yards in the South East Asia region. By locating in Vietnam, one is centrally located between major centres in Singapore and China and saving substantially on transportation costs of products compared to European production sites.

5.3 Specific Business Opportunities²⁷

A number of Norwegian companies is already active in Vietnam, either as owner purchasing new vessels (e.g. KGJS, Hoegh), as a partner in a shipyard (STX Europe), as a supplier of marine equipment (Rolls Royce, Jotun), or as a supplier of services (DNV).

Innovation Norway has elaborated two areas of cooperation between Norwegian and Vietnamese companies:

- Cooperation aiming at knowledge transfer;
- Cooperation relating to CSR issues.

Opportunities for cooperation

The business opportunities for Norwegian maritime companies in Vietnam, which relate to technology transfer, include:

- Place an order for new-building in Vietnam;
- Set up a shipyard in Vietnam;
- Set up production facilities to produce maritime equipment in Vietnam;
- Entering a licensing contract to produce *made-in-Vietnam maritime equipments* under Norwegian trade mark;
- Cooperate with Vietnam partners to develop Vietnam competence for checking, testing and after-sale services;
- Cooperate with Vietnam designer to develop ship-design competence inside Vietnam;
- Financing
- Operation and management

Most interesting opportunities are (i) placing an order for new-building since the quality of the carriers and experience of Norwegian companies are good, (ii) setting up production facilities for marine equipment by lower costs and increasing international competitiveness, (iii) cooperate with Vietnam partners in QA, testing and after-sale services because of lacking competencies in Vietnam and (iv) cooperate with Vietnam partners in developing management competencies.

Opportunities for cooperation on CSR issues

In addition to a more general need for cooperation to promote CSR awareness, cooperation related to and promoting green shipbuilding and green ship repairing in Vietnam will in most cases also advance CSR awareness among Vietnamese companies. Norwegian companies could provide expertise in this field as a service to Vietnamese companies, meanwhile building up a relationship that gives a headstart for doing business with these companies. Areas for cooperation in the field of CSR that are relevant for

²⁷ This section is a summary of Innovation Norway's report which is included in annex 5.

Norwegian companies can include measures to increase environmental performance of the Vietnamese industry and of its outputs:

- Promote Green Ship Design: encourage Vietnam shipyards and Vietnam ship-owners to select green design which can save energy, lower emission and meet other environmental requirements;
- Promote energy efficiency technologies within shipbuilding and maritime industry such as fuel switch, using silicon paint, waste heat recovery, pipe insulation, etc.
- Support Vietnam to start ship repairing with environmental friendly procedures and green-technologies.
- Assist in the better use of resources for shipbuilders, to reduce scrap and electricity/gas/water consumptions.

For Norwegian companies these cooperation areas may provide the opportunity to sell specialised equipment or skills.

Risk of cooperation with Vietnam businesses

There are three risk categories identified for cooperation with Vietnam businesses in the shipbuilding industry:

- Business and commercial risks – such as delays, exchange rate and since the financial crisis risk on the fulfilment of obligations and financial guarantees;
- Administrative/regulatory risks – such as delays, insufficient legal framework, bureaucracy and bribery risks;
- Technical risks – such as mishandling of equipment, physical damage, none performance and failure of launching the vessel.

Relevant support schemes for private sector engagement

Support from the Vietnamese government is mainly focussed on increasing the competitiveness of Vietnamese shipbuilders with stronger financial control, focus on profitability and value-added business, stop loss making businesses and strengthen management skills.

Support from the Norwegian government can be found through the Business Match Making Program (BMMP). In addition to the current support given through this programme, Innovation Norway has identified other fields of support, which could be considered by Norad:

- Grants for vocational and management training;
- Setting up entities as ‘Norwegian centre of expertise in Vietnam’;
- Advisory services to the shipbuilding industry;
- Technical assistance to main players in the shipbuilding industry;
- Provide financial support regarding R&D and investments;
- Increase the number of Vietnamese students to Norway.

In this way, the support schemes of Norway seem more suitable for Norwegian companies since they are focussed on international cooperation, whereas the support schemes of Vietnam mainly target their own industry improvements.

Annexes

The following annexes are included:

- Annex 1: List of abbreviations
- Annex 2: Terms of reference
- Annex 3: Literature overview
- Annex 4: Mission programme
- Annex 5: List of interviews held
- Annex 6: Innovation Norway Hanoi report

Annex 1 List of abbreviations

ABS	American Bureau of Shipping
ASEAN	Association of Southeast Asian Nations
BMMP	Business Match Making Programme
CGT	Compensated Gross Tonnes
CSR	Corporate Social Responsibility
DNV	Det Norske Veritas
dwt	Deadweight tonnage
FDI	Foreign Direct Investment
FPSO	Floating Production, Storage and Offloading
GDP	Gross Domestic Product
HCMC	Ho Chi Minh City
IACS	International Association of Classification Societies
JICA	Japan International Cooperation Agency
mIn	Million
Norad	Norwegian Agency for Development
WISEC	VINASHIN Shipbuilding Engineering
SSTI	Shipbuilding Science and Technology Institute
SWOT	Strengths, Weaknesses, Opportunities and Threats
VIMARU	Vietnam Maritime University (Haiphong)
WTO	World Trade Organisation

Annex 2: Terms of reference

Annex 3: Literature overview

- BAlance Technology Consulting GmbH et al, 2000, Competitiveness and Benchmarking in the Field of Marine Equipment. Study for the European Commission, DG Maritime Industries. Bremen: BAlance Technology Consulting GmbH
- CARE Research, 2008, Report on the Shipbuilding Industry. December 2008.
- CIA World factbook
- Lloyds/Fairplay world fleet database (October 2008 edition)
- Kenichi Ohno, Avoiding the middle income trap: Proposing Proactive Industrial Policy for Vietnam, 30 October 2009
- Martin Rama, Moving to Middle-Income Status: Donors and Vietnam beyond 2010, February 29, 2008
- ADB, website
- ECORYS, 2009, Study on the Competitiveness of the European Shipbuilding Industry. On behalf of the European Commission, October 2009.
- Norwegian Ministry of Trade and Industry, 2007, Steady as she goes, The government's strategy for environmentally friendly growth in maritime industry.
- NIS – 1 study, 2003, Study on Private Sector Development and Prospects for Norwegian Trade and Investment Interests in Vietnam (phase 1), September 2003.
- NIS – 2 study, 2004, Studies on Private Sector Development and Business Opportunities for Norwegian Industry and Trade in Vietnam, April/May 2004.
- Ministry of Foreign Affairs, 2008, The Vietnam Strategy, Utenriksdepartementet, June 2008.
- Innovation Norway, 2008, Market Opportunities in the Vietnam Maritime Sector. Innovation Norway Hanoi, December 2008.

Annex 4: Mission programme

Date	Time	Meeting	Address
Mon 15	9:00-10:00	VINAMARINE Mr. Do Duc Tien, Deputy Director General	8 Phạm Hùng
	11:00-12:00	Innovation Norway Mr. Kjell Arne Nilsen, Commercial Counsellor	Royal Norwegian Embassy in Hanoi 10th Floor, Block B, Vincom City Towers, 191 Ba Trieu Street
	14:00-15:00	Vinashin Group Mr. Pham Quoc Anh, CBO	172 Ngọc Khánh - Ba Đình 4th floor, meeting room 4.1
	15:30-16:30	Vinalines Mr Nguyen Huu Long, Director International Relations Dept.	Tòa nhà trung tâm TTTMHHQT (OCEAN PARK) Số 1 Đào Duy Anh, Phường Mai, Đống Đa, Hà Nội
Tue 16	6:00-8:30	Leaving for Hai Phong	Car rent, 2.5hours from Hanoi
	9:0-10:30	Nam Trieu Shipyard	Tam Hung - Thủy Nguyên- from Nam Trieu to Vimarú about 40 minutes
	10:45-12:00	Vietnam Maritime University Mr. Pham Xuan Duong, Vice Rector	484 Lạch Tray - Hải Phòng
	13:00-15:00	Michael Stroth, Principal Surveyor, District Manager DNV Hai Phong	Room 511 & 513, 5th FI TD Office Tower No. 4 - Lot 20A - Le Hong Phong St. Ngo Quyen District
	16:00-19:00	Go back to Ha Noi	
	20:50-22:50	Geoge Fly Hai Phong to HCMC	VN287
Wed 17	9:00	Vietship Opening	
Johan & Thinh in Hanoi	11:30-12:30	Meeting VINOMARINE at Vietships	
	14:00-15:00	Erik Ovesen, Commercial Counsellor	Embassy of Denmark, 19 Dien Bien Phu PHONE +84 (4) 3823 1888 (EXT 135)
George and Thu in HCMC	9:00-10:30	Saigon Shipmarin Mr. Toai, Director Business Development	No. 2 Dao Tri, Phuong Phu Thuan, Dist 7
	13:30-14:30	STX Offshore Vietnam Ltd	No. 6 Dong Xuyen, Rach Dua Ward
	15:00-16:00	PTSC Machelical & Construction	
	20:10	Fly to back to Hanoi	
Thur 18	8:30-10:30	Meetings at Vietships (George & Huong): Norwegian Maritime Exporters (NME) Mr. Ole Haenes, CEO	
	9:00-10:30	Meeting Alborg Hanoi office (Johan& Thinh)	Tungsin Tower
	11.00-12.00	Head of economic & commercial section Ms. Monique Bennema (Johan & Thinh)	Dutch Embassy, Daeha Office Tower, 6th floor, 360 Kim Ma Street, Ba Dinh District

Date	Time	Meeting	Address
	13:30...	<i>Meeting local companies at Vietship</i>	
		PTSC New Building Division	PTSC stand
		Dung Quat Shipbuilding Industry Co.	R60
		Ned deck Marine	A23,24
	16:00-17:00	Rolls Royce Vietnam Mr. Patrick Regis, President	Booth A05 Vietship, Chris Hampden, Buz Development Project Manager Tel: +84 1262 194 805
	18:00-20:00	<i>Norwegian Reception Meetings with Norwegian shipowners : Hoegh, Jepsen Group...</i>	Melia Hotel
Friday 19	9:00-12:00	<i>Meeting Norwegian companies at Norwegian Seminar</i>	
	14:00-15:30	Briefing with Innovation Norway Hanoi	Vietship hall

Annex 5: List of interviews held

Interviews were held with:

- VINAMARINE (VN)
- Innovation Norway Hanoi
- VINASHIN (VN)
- VINALINES (VN)
- NASICO / Nam Trieu shipyard (VN) – including site visit
- VIMARU – Vietnamese Maritime University (VN)
- DNV (NO)
- STX (NO/KR) – including site visit
- Saigon Shipmarin (AUS) – including site visit
- PTSC Mechanical and Construction Co. Ltd. (VN) – including site visit
- Danish Embassy (DK)
- VINOMARINE (at VietShip) (NO)
- Aalborg Industries (DK)
- Netherlands Embassy (NL)
- BMS Davinci (at VietShip) (NO)
- VISEC (at VietShip) (VN)
- Norwegian Maritime Exporters (at VietShip) (NO)
- Rolls Royce (at VietShip) (NO/UK)

More informal talks were held with various companies at VietShip and at informal events organised by Innovation Norway, among which:

- MICO group (VN)
- Dong Joo Welding (KR)
- VINASHIN TGC Container (VN)
- Sauer & Sohn (GE)
- China Merchants Group – HBM (CN)
- Alewijnse (NL)
- LHE (KR)
- R&M Ship Tec (GE)
- SeaMate / OST (JPN)
- Terex (US/VN)
- TTS (SE)
- Strategic Marine (AUS)
- McGregor Cargotec (UK/SN/CN)
- American Bureau of Shipping (ABS) (US)
- Lloyd's Register (UK)
- Hyundai VINASHIN (KR/VN)
- Korean Register (KR)
- Hanviet Industrial Equipments Jointstock Company (VN)
- Nippon Paint (JP/SN)
- TOMAC Heavy Transporters Company Limited (CN)
- Shanghai Haipeng Special Transporter Company Limited (CN)
- Kelantan Electric Company, Singapore (SN)
- Thanhquyen Company Limited (VN)

- Nha May Diesel Guangzhou (CN)
- Elektromontaz Gdansk SA (PL)
- Kwong Soon Offshore and Marine (Vietnam) Company Limited (KR)
- El-Tec Vietnam (VN)
- P & P Korea (KR)
- Sener, Spain (ES)
- Autronica (NO)
- John Gjerde (NO)
- Ned-deck Marine (NL)
- Jason (SN)
- Broderene Dahl (NO)
- Clayton Scandinavia (NO)
- HME (NL)
- Vietnam Register (VN)
- Isotherm (NO)
- Hamburg Messe & Congress (GE)
- Multiplus Solutions (NO)
- KICOX (Korean Industrial Complex Co Busan) (KR)
- IFS (NO)

Annex 6: report of Innovation Hanoi on issues 5 and 6

Market and Commercial Issues of Vietnam Shipbuilding and Maritime Industry

Input to ECORY's "Vietnam Maritime Sector Study",
prepared for NORAD



April 2010

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Mrs. Tran Hai Anh is at your disposal to answer any questions
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No warranty or guarantee, whether express or implied, is made with respect to the information reported or to the findings observations and conclusions expressed in this report. Furthermore, such information, findings, observations and conclusions are based solely upon information in existence at the time of report preparation.

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PART II: MARKET AND COMMERCIAL ISSUES OF SHIPBUILDING AND MARITIME INDUSTRY

1. ISSUES 5: COMMERCIAL AND MARKET ASSESSMENT

1.1 Shipbuilding Industry Structure

Overview

Shipbuilding is an important industry in Vietnam, which not only creates jobs; stimulates development of related supportive industries but also supports the shipping industry; and increases foreign currency inflow.

Thanks to its favourable geographical condition, Vietnam has developed around 150 shipyards. Of those, only 44 shipyards have exporting capacity. The remaining are small shipyards for building/repairing in-land waterway vessels.

Table 1: List of Shipyards in Vietnam Produce Vessels for Exports

No	Name of shipyards	Current capacity		Upgrading capacity by 2015	
		NB	Repair	NB	Repair
I	Northern cluster				
	<i>Under Vinashin</i>				
1	Ha Long shipyard	50.000dwt	10.000dwt	75.000dwt	50.000dwt
2	Pha Rung shipyard	34.000dwt	16.000dwt	100.000dwt	100.000dwt
3	Nam Trieu shipyard	150.000dwt	10.000dwt		100.000dwt
4	Ben Kien shipyard	15.000dwt		20.000dwt	
5	Bach Dang shipyard	50.000dwt	10.000dwt		
6	Song Cam shipyard	4.000dwt	1.000dwt		
7	Tam Bac shipyard	1.000dwt	600dwt		
8	Thanh Long shipyard	4.000dwt	1.500dwt		
9	Hai Duong shipyard	1.000dwt	600dwt		
10	Song Lo shipyard	600dwt	600dwt		
11	Song Hong shipyard	5.000dwt			
12	Diem Dien shipyard	1.000dwt		6.500dwt	
13	Thai Binh shipyard	1.000dwt			
14	Nam Ha shipyard	3.500dwt	2.000dwt		
15	Song Dao shipyard	3.500dwt	1.500dwt		
16	Truong Xuan shipyard	3.500dwt			
17	Hoang Anh shipyard	4.000dwt	2.000dwt		
18	Thinh Long shipyard	20.000dwt			
19	Ben Thuy shipyard	4.000dwt		10.000dwt	
	<i>Outside Vinashin</i>				

No	Name of shipyards	Current capacity		Upgrading capacity by 2015	
		NB	Repair	NB	Repair
20	189 shipyard (Naval)	High speed boats made from aluminum			
21	Lisemco shipyard	10,000 dwt	10,000 dwt	10,000 dwt	
22	Lisemco 5 shipyard	10,000 dwt	10,000 dwt	10,000 dwt	
23	Vinashin-Damen shipyard	3,000 dwt	3,000 dwt		

No	Name of shipyards	Current capacity		Upgrading capacity by 2015	
		NB	Repair	NB	Repair
II	Central cluster				
24	<i>Under Vinashin</i>				
25	Quang Binh shipyard	600dwt			
26	Da Nang shipyard	1.500dwt			
27	Dung Quat shipyard	400.000dwt	400.000dwt		
28	Nha Trang shipyard	3.500dwt			
29	Cam Ranh shipyard	30.000dwt		100.000dwt	100.000dwt
30	Huyn-dai-Vinashin shipyard	80,000 dwt	80,000 dwt		
	<i>Outside Vinashin</i>				
31	Song Thu shipyard (naval)	Naval and special vessels			
III	Southern cluster				
	<i>Under Vinashin</i>				
32	SSIC (Saigon shipbuilding industry company)	6.500dwt		22.500dwt	22.500dwt
33	Saigonshipmarin	6.500dwt	30.000dwt	12.500dwt	30.000dwt
34	76 shipyard	1.000dwt	1.000dwt	6.500dwt	3.000dwt
35	Can Tho shipyard	6.500dwt	1.500dwt		
36	Nhan Trach shipyard	15,000 dwt		45,000 dwt	
37	<i>Outside Vinashin</i>				
38	Ba son shipyard (Naval)	17,000 dwt	17,000 dwt		
39	PTSC shipyard (under PV)	Oil and gas service vessels			
40	PV new-building shipyard	Oil and gas service vessels			
41	Saigon shipyard	Special vessel			
41	South East Asia Shipyard	Special vessel made from aluminum			
43	Kien Giang shipyard	Special vessel made from composite			
44	STX shipyard	Offshore vessel			

Vietnam Shipbuilding Industry Group (Vinashin) is the largest shipbuilder in Vietnam, owned by the Vietnamese government. Vinashin has about 160 subsidiaries, including 39 shipyards (30 shipyards under operation and 9

shipyards under construction). Currently Vinashin’s employees are 75,000. Vinashin accounts for about 70%-80% of total Vietnam shipbuilding capacity.²⁸

Apart from Vinashin, Vietnam has naval shipyards, PV²⁹ shipyards, foreign-owned shipyards, Lisemco³⁰ shipyards and other private small shipyards. At present, Vinalines³¹ has two projects, which are a new-building shipyard in Hai Phong and a repairing shipyard in Ha Long respectively. Both projects are under implementation.

Ministry of Transportation (MOT) is responsible for all transportation modes including ship building and related services, while Ministry of Industry and Trade (MOIT) is responsible for industrial development including shipbuilding and shipbuilding supportive industry. Vinashin, however, is under both MOT and Government Office, which is able to report directly to Prime Minister. Furthermore, Vinamarine³² is the government regulator in maritime sector including shipbuilding. At the moment, Vinamarine is responsible for preparing *Master Plan for Vietnam Shipbuilding Development from 2010 to 2020 with perspective to 2030*. The study is expected to be started in April 2010 and completed by December 2010.

Geographical Variation

In Vietnam, the principle shipbuilding industry facilities are located in three clusters: Southern, Central and Northern. Each cluster has some advantages and disadvantages, and these are illustrated in table 2:

Table 2: Geographical cluster of Vietnam

Geographic Location and capacity	Advantages	Disadvantages
Northern Cluster (Around Hai Phong and Red river delta area), new building up to 100,000 DWT.	<ul style="list-style-type: none"> - Proximity to political decision centre; - Most stated owned enterprises have HQ here; - More efficient for special or politically sensitive projects; 	<ul style="list-style-type: none"> - Stronger bureaucratic hindrances and difficulties related to foreign investments. - Low English spoken skills

²⁸ According to Mr. Le Loc, Chief Investment Officer of Vinashin (Le Loc presentation in Vietship 2010)

²⁹ PV: PetroVietnam. For further information, please visit website: www.petrovietnam.com.vn

³⁰ Lisemco shipyards are shipyards under Lilama Corporation, located in Hai Phong. For further information, please visit website: www.lisemco.com.vn

³¹ Vinalines is Vietnam Shipping Corporation, owned by Government. For further information, please visit website: www.vinalines.com.vn

³² Vinamarine is Vietnam Marine Bureau. For further information, please visit website: www.vinamarine.gov.vn

Geographic Location and capacity	Advantages	Disadvantages
	<ul style="list-style-type: none"> - Satisfactory infrastructure (including Hai Phong port); - Large local market ; - Hard working labour force; - Most developed mechanical industry. 	
<p>Central Cluster (Around Dung Quat and Nha Trang area). New building capacity up to 300,000 DWT.</p>	<ul style="list-style-type: none"> - Lowest cost (labour, land, etc.); - Easy access to specific inputs (raw material and commodities) - Lower competition 	<ul style="list-style-type: none"> - Poor infrastructure; - Limited FDI; - Higher administrative and regulatory uncertainties. - Limited local markets. - Low English spoken skills
Geographic Location and capacity	Advantages	Disadvantages
<p>Southern Cluster (Around Ba Ria – Vung Tau and Mekong Delta area). New building capacity up to 50,000 DWT.</p>	<ul style="list-style-type: none"> - Better infrastructure (ports, roads, telecoms); - Major concentration of existing FDI; - Largest domestic market for higher priced products. 	<p>Far from political decision centres;</p> <p>Higher competition from local and foreign companies.</p>

According to Vietnam’s existing expansion program, the Northern cluster will focus on containership and tankers of around 70,000 DWT – 100,000 DWT; the Central cluster on ships between 250,000 DWT – 300,000 DWT, and the South cluster on ships around 30,000 DWT. The main yards in the clusters are illustrated in the following figures.

Figure 1: Main shipyards in the North cluster

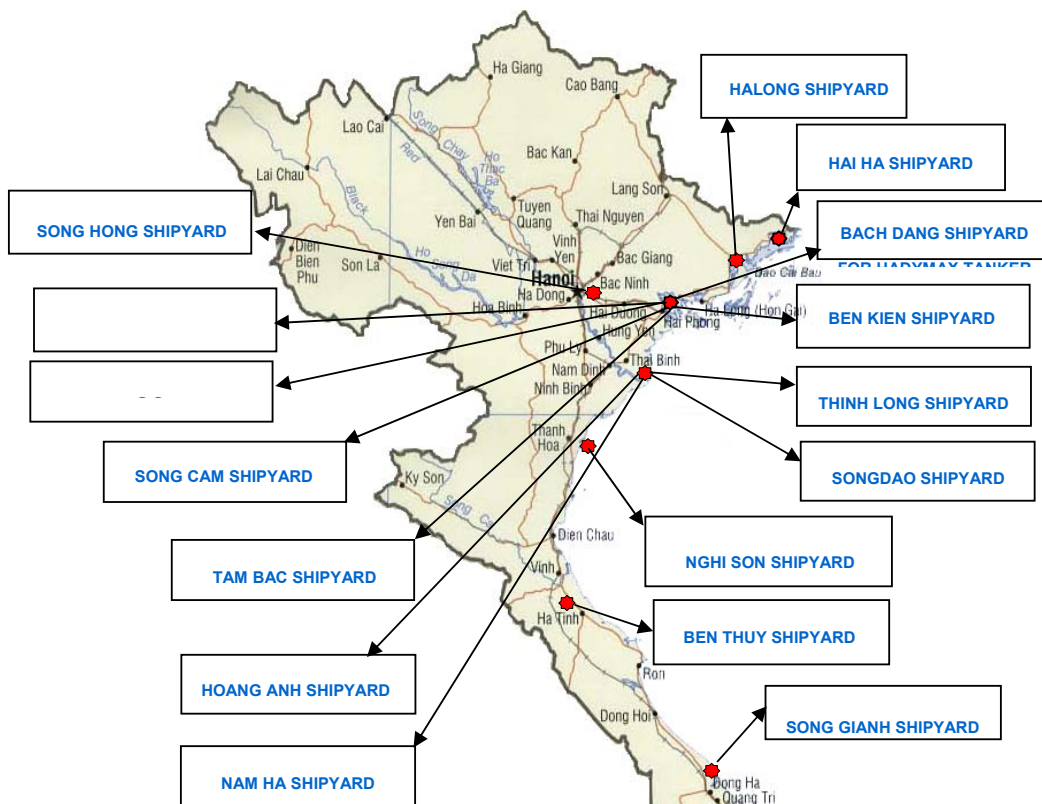


Figure 2: Main shipyards in the Central cluster

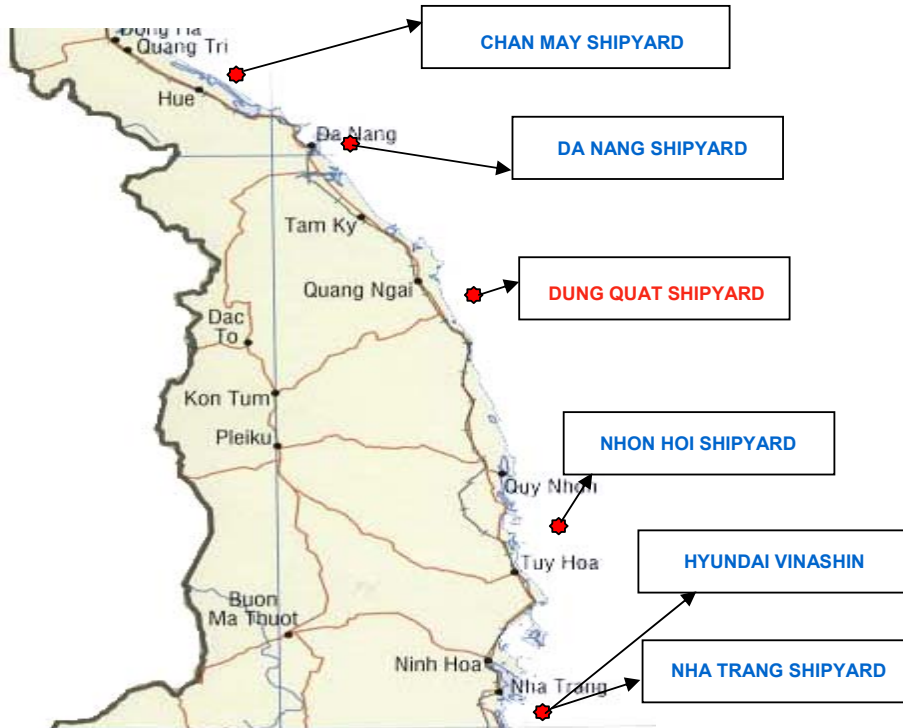
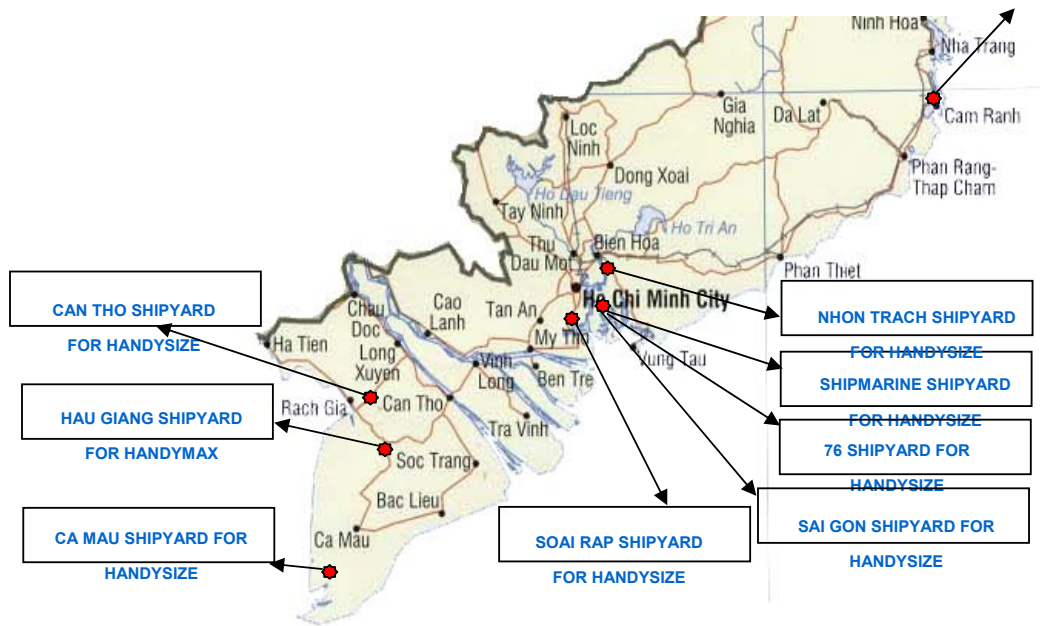


Figure 3: Main shipyards in the South cluster



1.2 Related supportive Industries for Ship Building

Vietnam has acknowledged the importance of developing shipbuilding supportive industries that can help Vietnam to achieve its target of up to 60-70% locally produced ships equipment by 2015. Vietnam has set up the following objectives for its supportive industries:

- (i) Locally produce steel for the ship building industry
- (ii) Locally produce propellers and engines
- (iii) Locally produced deck equipment
- (iv) Locally produced secondary machineries and pipes
- (v) Locally produced electric cabinets, automation systems and electric cables
- (vi) Locally produced secondary materials, like welding material, anti-corrosion material, protection material, etc.

In principle, Vietnam has a policy to cooperate with foreign manufacturers to set up joint ventures, transfer technology, provide licenses, to support establishment of 100% foreign owned companies, etc. in order to develop its supportive industries.

At present, Vinashin has two steel factories in Cai Lan industrial zone, Quang Ninh province namely Cuu Long Vinashin steel factory and Kansai – Vinashin – Hai Phong steel factory. These can produce plate steel with capacity of 500,000 tons per year/factory.

Mechanical companies under Vinashin are producing anchors, anchors chains, winches and electric cable. Vinashin paint factory is producing paint for ships. Nam Trieu shipyard is producing welding material while interior for ship is produced by Sejin-Vinashin Joint Venture Company.

Vinashin bought license from Man B&M and Mitsubishi Heavy Industries to produce (partly) and install engines under these trade marks (two strokes up to 9,000 HP). Joint Venture between Vinashin and Yanmar is going to install Yanmar engines (4 strokes up to 2,000 HP) in 2010.

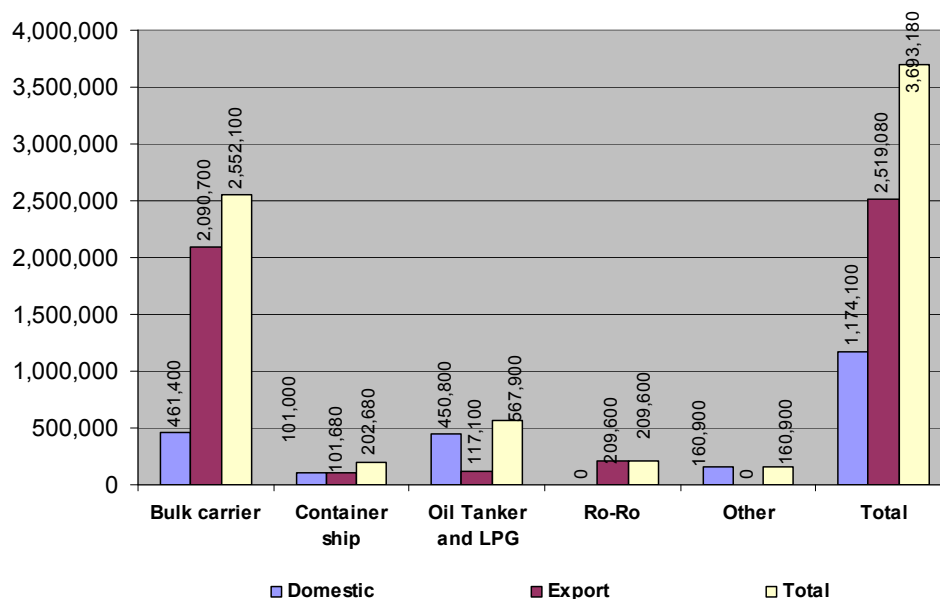
Vinashin has a joint venture with MacGregor to produce hatch covers and cranes locally. Mechanical companies under Vinashin are producing anchors, anchors chains, winches and electric cable.

A comprehensive list of Vietnam enterprises working in supportive industries is presented in Annex 1.

1.3 Level of technology and know-how

Vietnam started to develop intensively its shipbuilding industry since 2004, following the trend of moving the industry from the Western world to Asia. In general, Vietnamese yards produce smaller tonnage vessels such as tankers, bulkers, and multipurpose vessels. Recently, Vietnam’s new building order book has also increased with new orders of Aframax and VLCC tankers. At present, about 70% of Vinashin’s firm order book is bulk carriers³³.

Figure 4: Vinashin firm order book by type of vessel³⁴



The main vessel type portfolio of the Vietnamese yards today is:

- Bulk carrier vessels (handysize or/handymax);
- Crude oil tankers (afamax/VLCC);
- Container vessels (up to 1,016 TEU);
- General cargo vessels (up to 12,500 DWT);
- LPG vessels (up to 7,200 cbm/6,500 DWT);
- Chemical/Oil products tankers (up to 15,000 DWT);

³³ Le Loc presentation in Vietship 2010

³⁴ Le Loc presentation in Vietship 2010

- Multi-purpose (MPP) container vessels (up to 15,000 DWT);
- Pure car carriers (PCC) (up to 6,900 unit/27,000 DWT);
- Floating Storage and offloading (FSO) vessels (up to 150,000 DWT);
- Anchor handling tug supply (AHTS) vessels (up to 4,000 DWT);
- Others:
 - o Dredgers (max. 1,500 m³);
 - o Passenger boats (about 100 seats);
 - o Fishing boats (max 600 cv);
 - o High speed boats (max. 30 miles/h);
 - o Tugboats , barges, yachts, rescues ships

Vietnam aims to develop a capacity to build various kinds of ship through technology transfer and joint ventures. An example of Vietnam's advances has been the two Diamond 53 class 54,000 DWT handymaxs, which were handed over simultaneously by Ha Long and Nam Trieu shipyard. 105,000 DWT Aframax tankers are built in Vinashin Dung Quat's shipyard under the contract with PetroVietnam and FSO 5, 150,000 DWT, is built in Nam Trieu Vinashin shipyard. However, building large tankers are challenges for Vinashin. Delays have been seen in both latter projects.

Another initiative, which is giving added dimension to Vietnam's production and technical capacity, is the agreement entered with Höegh Autoliners in the field of pure car carriers (6,900 cars capacity). After signing the Shipbuilding Contract - Höegh has further developed business relations within Vietnam as well as taken responsibilities as sponsor for educational programs, such as: (i) Höegh, together with NORAD, Jotun Paints and DNV35 and Rolls- Royce have been sponsoring a Shipbuilding Training Program within Vinashin. The Training program is a Government-to-Government agreement between Vietnam and Norway; (ii) Höegh is sponsoring a Vietnamese Sea Farers Education Program with the intention to develop, educate and employ Vietnamese sea farers on Höegh Autoliners' vessels; (iii) technology Transfer and Management Support.

STX Europe (former Aker Yards) has through its joint venture with the Singaporean company: Amingo (a financial partner) created a new 100% FDI³⁶ shipyard in Vietnam that specializes in producing offshore support vessels at Vung Tau. The yard is expected to have an output capacity of three to four new-builds a year. The first project involves a series of six anchor-handlers,

³⁵ Det Norske Veritas, Norwegian Classification Society)

³⁶ FDI stand for Foreign Direct Investment

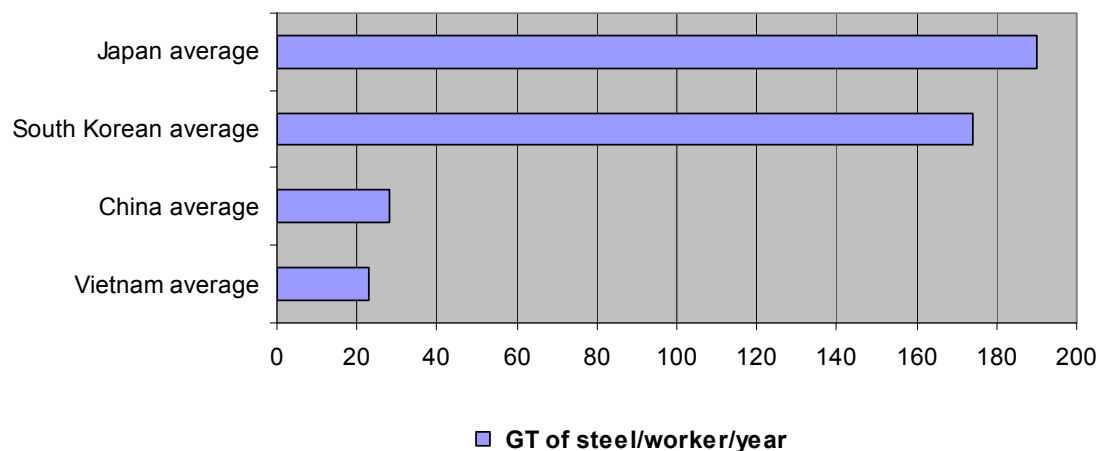
incorporation the Aker AG08 design and contracted through Aker Capital, for the Asian offshore market. (Shipowner is Aker/DOF). The first vessel is expected to be handed over on 28 April 2010.

Under a joint venture agreement between Damen Shipyards of the Netherlands and Vinashin, a new yard is to be created in the Hai Phong area to target more specialized tonnage below 10,000 DWT. Damen - Vinashin shipyard will apply the Dutch partners' particular expertise in fields such as tugs, offshore vessels and workboats, high speed crafts and small cargo ships.

In general, shipbuilding infrastructure/facilities inside Vietnam shipyards are quite advance and are comparable with shipyards in other shipbuilding nations. Vinashin has a plan to increase its slipways/docks from 27 to 72 by 2015³⁷. However, we now see that some of these plans are far behind schedule due to lack of capital.

However, even with advanced infrastructure of shipyards, shipbuilding productivity in Vietnam is low in comparison to other shipbuilding nations. Vietnam shipbuilding productivity per worker is equal to 12% of Japanese, 13% of South Korean and 83% of Chinese. And, this clearly shows the need for improvement within management/planning in the industry.

Figure 5: Shipyards Productivity Comparison³⁸



³⁷ Le Loc presentation in Vietship 2010

³⁸ Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009

Green shipbuilding is new concept in Vietnam. It is usually not particular requested by Vietnam ship-owners due to traditional thinking and focus on initial (low) cost. However, most of Vietnam shipbuilders are aware of green shipbuilding requirements and are moving positively toward green shipbuilding. According to Vinashin³⁹, most of the vessels built by Vinashin follow and satisfy the updated regulations of IMO and the world leading classification societies such as DNV, ABS, GL, BV, RINA, and KR. Ships and selected equipments are designed and produced to save material and energy. STX Vietnam offshore Ltd. has already got green shipbuilding certificate. Hyundai - Vinashin shipyard, agrees to use new technology to treat waste. Local Vietnam authorities now react stronger against polluter and polluting technologies, and together with the foreign ships owners' new requirements there is some drive towards green shipbuilding.

1.4 Level of foreign investments and trade relations

Three models of foreign investments in shipbuilding and relating industries are seen in Vietnam:

- Contractual partnership;
- 100% of foreign own enterprises;
- Joint venture with Vietnamese partners.

Contractual partnership

Contractual partnership is the most popular business model in Vietnam shipbuilding and maritime industry. Contractual agreement can be either a new order for shipbuilding, a contract of partly fabricating maritime equipments, a licensing contract for producing maritime equipment under foreign trade names, etc.

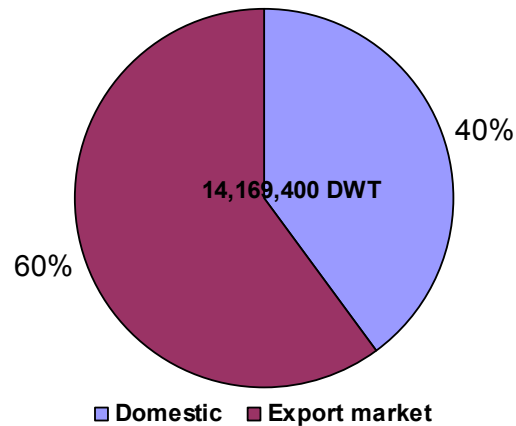
Foreign orders play an important role in Vietnam shipbuilding sector and accounts for 60% of Vinashin's order book⁴⁰. Foreign orders not only generate jobs and revenues but also contribute to technology transfer within Vietnam shipbuilding industry.

Figure 6: Vinashin Domestic vs Export Market⁴¹

³⁹ Le Loc presentation in Vietship 2010

⁴⁰ Le Loc presentation in Vietship 2010

⁴¹ Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009



As of 31 December 2009, Ray Shipping Ltd (Israel) is the largest foreign customers of Vinashin and Norwegian ship-owners are the second largest, which respectively accounts for 16.6% and 12.2% of Vinashin's order book (in terms of DWT).

However, it should be noted that these and other numbers about firm orders and options are prone to uncertainties and should be interpreted cautiously. This due to the fact that "firm" contracts are delayed and most probably will never be going ahead.

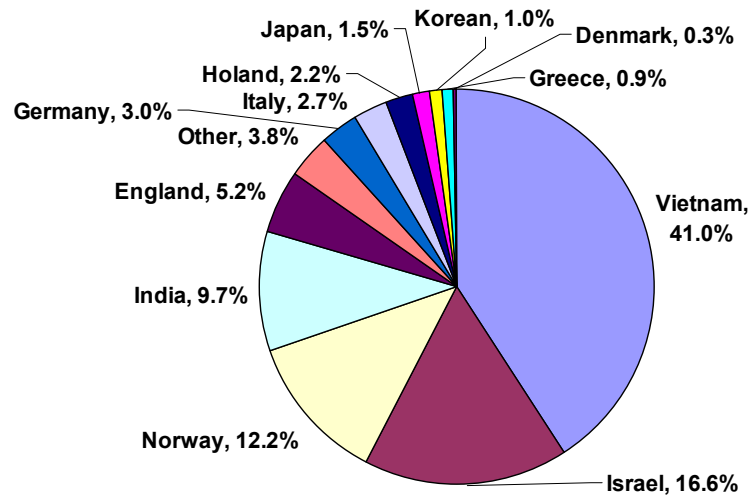
Table 3: Top ten Vinashin's customers by order book (US\$ million)⁴²

No	Customer	Country	Firm	Option	Total
1	Vinalines	Vietnam	123	2,361	2,484
2	Ray Shipping Ltd	Israel	377	1,497	1,874
3	Hoegh Autolines	Norway	273	273	546
4	KGJS cement A/S	Norway	142	284	426
5	Mediterranean di Navigazione SPA	Italy	190	117	307

⁴² Le Loc presentation in Vietship 2010

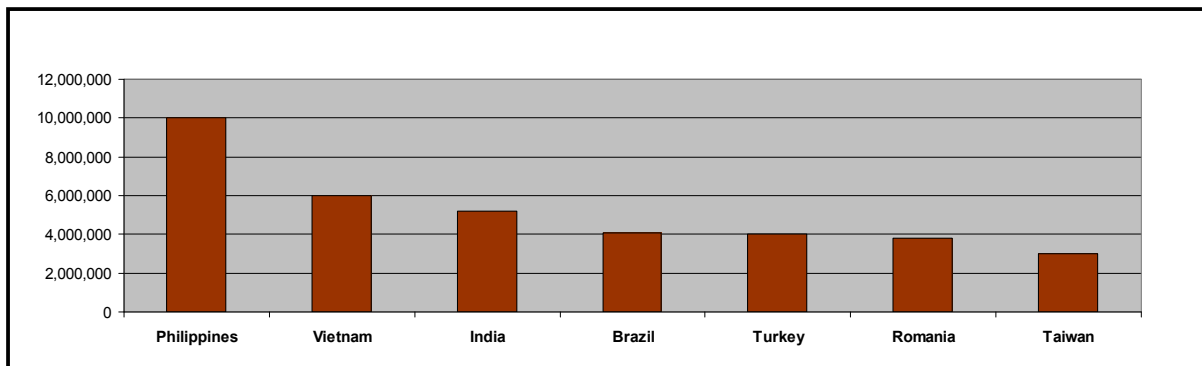
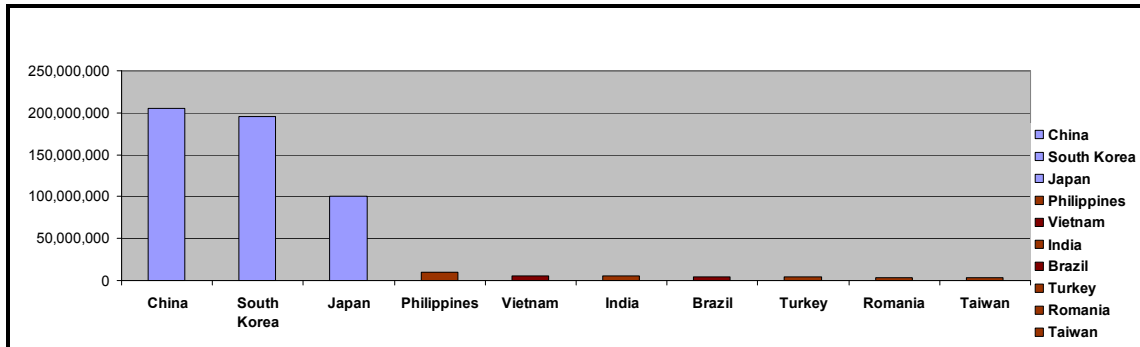
6	Iason Hellenic Shipping Co, Ltd.	Greece	105	105	210
7	PVTrans	Vietnam	191		191
8	Orange 5 GmbH & Co. KG	Germany	171		171
9	PTSC	Vietnam	169		169
10	Thoresen Shipping Singapore PTE Ltd.	Thailand	103		103

Figure 7: Order Book by Geography (both firm and optional)



According to CSL and Willis⁴³, Vietnam's order book ranks fifth in the world and ranks second in Asia, in terms of DWT, as at January 2010.

Figure 8: Present Market Conditions – Order book by country of build



Apart from orders for new-building, contractual partnership can be in form of licensing contract. Bach Dang Vinashin shipyard bought licenses from Mitsubishi Heavy Industries and Man B&W to manufacture (partly) and install engines for ships; Vinashina and TTS have a upcoming project to grant license for Vinashina to produce hatch cover under TTS's trade mark; Vinashin has a project to buy license from Isotta Fraschini to produce diesel engine; etc. In most cases, foreign companies will not only provide license/trade mark but also provide technology and technical training.

100% foreign owned enterprise

⁴³ CSL and Willis presentation in Vietship 2010

100% foreign owned enterprises in shipbuilding/maritime industries in Vietnam include shipyards; production facilities and mechanical service factories. At present, there are 05 foreign owned shipyards in Vietnam, namely STX Vietnam offshore Ltd. (owned by STX Europe); Strategic Marine (owned by Australian); Saigon shipyard (owned by Singaporean); Kien Giang composite shipyard (owned by Australian); and South East Asia Shipyard (owned by French). These shipyards mostly build ships for foreign ship-owners. Several of them repair ships for both Vietnamese and foreign ship-owners.

100% foreign owned production facilities operate well in Vietnam. Most of them produce maritime equipment/products for exports with a small proportion for local uses, i.e. Odim Vietnam (Odim has been bought by Rolls Royce) produces offshore equipments; Vinomarine (under construction, owned by three Norwegian companies,) produces doors and hatches, ventilation valves, toilet; Nakashima (Japanese) produces ship propellers; etc.

Joint Venture

Joint Venture is a business model typically used before Law of Enterprises came into effect since 2007. Before that law, Joint Ventures between foreigner and Vietnamese partner enjoined a number of privileges. After 2007, both Vietnam and foreign enterprises are treated equally in principle. Joint Ventures are only seen in a restricted number of sectors, which, according to Vietnam WTO's Roadmap, have not yet been opened for 100% foreign owned enterprises.

Huundai- Vinashin shipyard, Container Vinashin Tgc, Alborg Boiler, Song San – Vinashin Co. Ltd, Damen – Vinashin shipyard, Seijin – Vinashin Marine Accommodation, Vinakita, etc. are examples for Joint Ventures between Vinashin and foreign partners. In these joint ventures, Vinashin's contributions usually are right of land use, trade name, etc. which are less than 50% of total shares.

In most case, joint venture and 100% foreign owned enterprises operate more efficiently in comparison with Vietnamese companies.

1.5 Profitable and financial strength

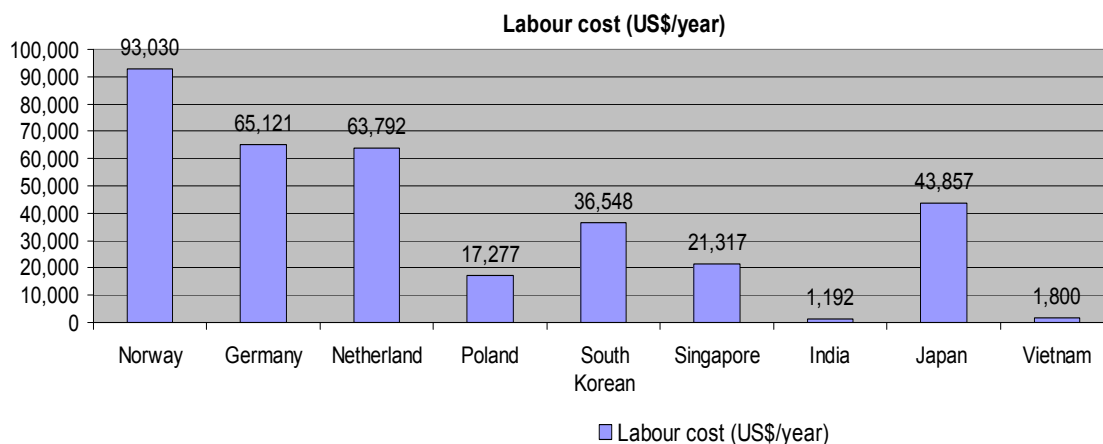
Financial Strength

Financial strengths of Vietnam shipbuilding industry includes: (i) young and cheap labour force; (ii) receiving financial incentives from government.

Vietnam has one of youngest South East Asian populations with more than 50% of population below age of 25, which will lead to a dramatic increase of working age population within next two decades. By April 2009, Vietnam labour force was

43.87 million, which accounted for 51% of total population. Average labour cost per annual of Vinashin employees is US\$ 1,800⁴⁴, which accounts for 2% - 3% of European annual labour cost, 4% of Japan annual labour cost, 5% and 8% of South Korean and Singaporean annual labour costs respectively⁴⁵. However, low productivity of Vietnamese worker in shipbuilding industry may weaken the cost advantage.

Figure 9: Annual Labour Cost Comparison



Vietnam government gives highest priority to shipbuilding industry and provides a number of financial incentives, which include:

- Exemption on export taxes;
- Refund/exemption import tax for imported equipment and material for building exported-ships ;
- Government covers up to 50% of working capital available to state owned enterprises;
- Restrictions on second hand ship import⁴⁶.

⁴⁴ Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009

⁴⁵ Study of Competitiveness of European Shipbuilding Industry, Ecorys, October 2009; and Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009

⁴⁶ Vietnam is currently protecting its domestic shipbuilding with a 10-15% import tariff on fishing and small cargo ships and 5-7.5% import tariff on cargo ships over 5,000 dwt.

- Providing Vinashin with soft loans: most recently, the government has made 750 million US\$ available for the sector in order to finance the development into a modern industry that can meet future international quality demands;
- Allowing Vinashin to retain total corporation income tax and capital – use tax⁴⁷ for the period 2002-2010 for re-investments;

Obviously, financial incentives given by the government contributed to the booming development of Vietnam shipbuilding industry last 5 years. However, it also create several 'side-effects' such as putting more debt burden on Vinashin due to 750 million US\$ soft loan; and unfair competition between shipbuilding and other industries in Vietnam, etc. It is anticipated that these financial incentives will be reviewed in time to come in order to promote sustainable development of Vietnam ship-building industry.

Profitable Level

Typically, labour cost proportion of a vessel built in Vietnam is far less than labour cost proportion of a vessel built in Europe. According to DNV⁴⁸, equipment and material usually accounts for the largest cost proportion (60%-70%) of a typical vessel built in Vietnam. The materials are mostly imported. Fabrication (salaries, gas and electricity consumption) accounts for 15%-18% only. Profit is said to be 8%-10%.

As result, overall local earning proportion (shipbuilders, workers, manufacturers, etc.) is about 30% of overall vessel cost. Vietnam has an ambition to increase local proportion by 60%-70% in 2015 through supporting local maritime supportive industry. A National Mechanical Focus Program is under implementation which is supported by government by different mechanism such as soft loan, budget money for R&D work, etc.

Figure 10: Typical Breaking down Vietnam New Building Ship Price⁴⁹

⁴⁷ In Vietnam, profitable State Enterprises are expected to provide a return to the State through the payment of a tax called "capital user tax".

⁴⁸ Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009

⁴⁹ Andrew Westwood's presentation in Green Shipbuilding Seminar, organized by DNV, Oslo, June 2009

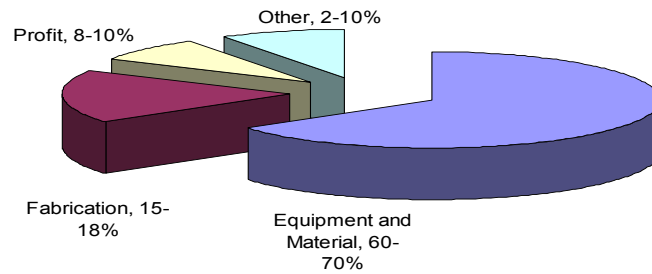
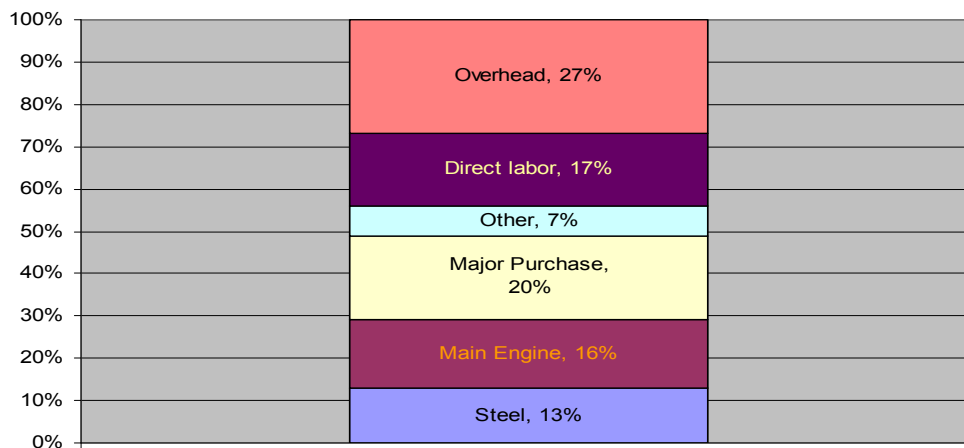


Figure 11: Typical Breaking down European New Building Ship Price⁵⁰



1

Recently, there are increasing public concerns about Vinashin financial status, the biggest shipbuilders in Vietnam, due to its spreading investments over a number of sectors outside its core business. According to Vinashin's financial report, by the end of 2007, Vinashin's total assets are VND 77,322 billion (US\$ 4.8 billion). 91.4% of this figure is debt⁵¹ including US\$ 750 million government guaranteed international bond issued in 2005; US\$ 600 million borrows from 15 international banks and funds in 2007; and VND 8,3000 million (US\$ 500 million) domestic bonds issued in 2006-2008. Furthermore, 17% of Vinashin's firm order book has been cancelled within 2008-2009⁵². Vinashin is now facing cash shortage and it is somehow difficult for Vinashin to fulfil its obligations under signed contracts.

1.7 Labour relations and other CSR related issues

⁵⁰ Study of Competitiveness of European Shipbuilding Industry, Ecorys, October 2009;

⁵¹ According to www.tienphongonline.com.vn

⁵² Le Loc presentation in Vietship 2010

In Vietnam, the overall concept of CSR is not well understood in general. However, no serious problems relating to CSR have been reported within shipbuilding and maritime industry. Within this report, three aspects of CSR will be assessed: (i) Labour standard; (ii) Environment; (iii) Community.

Labour standard

At present, around 110,000 workers are working for the shipbuilding industry and maritime relating industry, which have better paid in comparison with workers working in other sectors such as textile, agriculture, seafood, etc. A number of workers receive training after recruitment. Usually, workers have labour contracts with the employers, which last longer than 6 months. Hence, according to Vietnam Labour Code, employers pay social and health insurance for workers. Every enterprise with more than 10 employees has a labour union, which is representative of workers to communicate with the employer. Before 2008, it was easy for workers to move from one enterprise to another enterprise within the shipbuilding industry.

Due to the financial crisis in 2008-2009, situation has been changed. It is reported that shipbuilding workers receive late salary. In addition, lay-offs have been observed in a number of shipyard and maritime industry factories.

In shipbuilding and maritime industry, no child-labour, no compulsory workers and no discrimination have been reported.

Environmental issues

In terms of environment issues within the shipbuilding and maritime industry, there is no report about serious environmental pollution caused by shipyards or maritime industries, except Hyundai-Vinashin shipyard. However, Hyundai-Vinashin shipyard recently has taken a number of measures to prevent pollution and to take good care of polluted waste. Vietnam ship-owners usually select low cost equipment in order to lower initial capital investment. Low emission, energy efficiency, environmental-friendly design, and climate change issue are not taken into consideration by local ship-owners, but by shipyards, who build ships for export. Furthermore, low productivity of workers is an evidence to show that there is room for improvement in terms of best use of resources in order to reduce emission.

Community issues

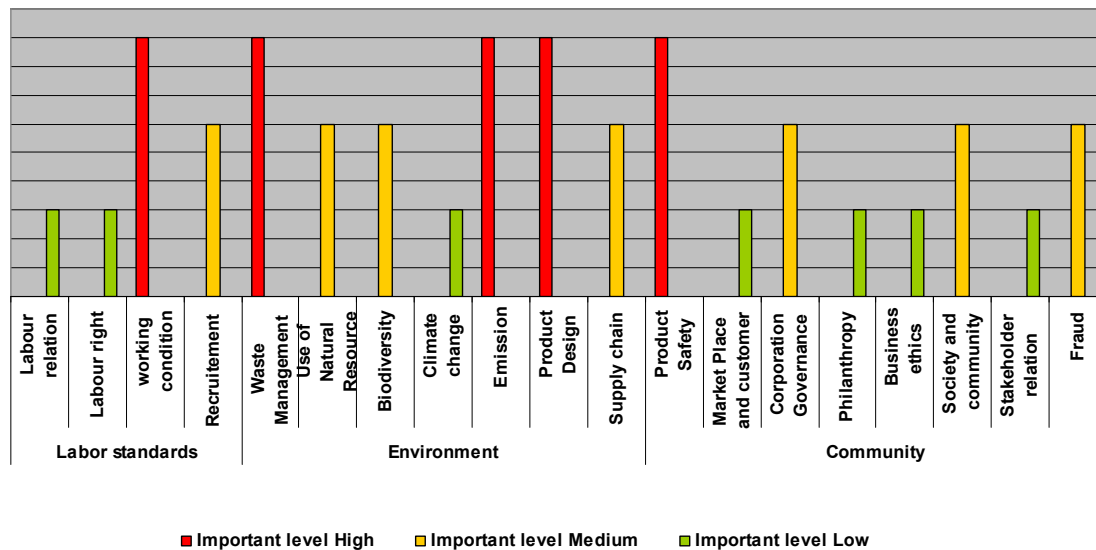
No conflict between shipbuilding/maritime industry and local community has been reported. Vietnam Shipbuilders, especially shipbuilders in the Central

region, significantly contribute to local development of the infrastructure. Furthermore, shipbuilders also provide job for young generation, contribute to improve skills of local workers, and generate more income for local people.

Overall awareness

IN Hanoi have interviewed representatives from the top management of Vinashina⁵³ about CSR. In general the concept of CSR is known⁵⁴. The answers can not show a statistical significance as the numbers of responds are too low. However, the interviews show a overall awareness of CSR. Issues directly relating to own products and own factory are the most important. Labour issues and external issues such as climate, market and business ethics have been low ranked.

Figure 12: CSR Overall Awareness



1.8 Competition and competitiveness

The competition and competitiveness of Vietnam shipbuilding and maritime industry are assessed based on the following criteria⁵⁵:

- Industry Structure

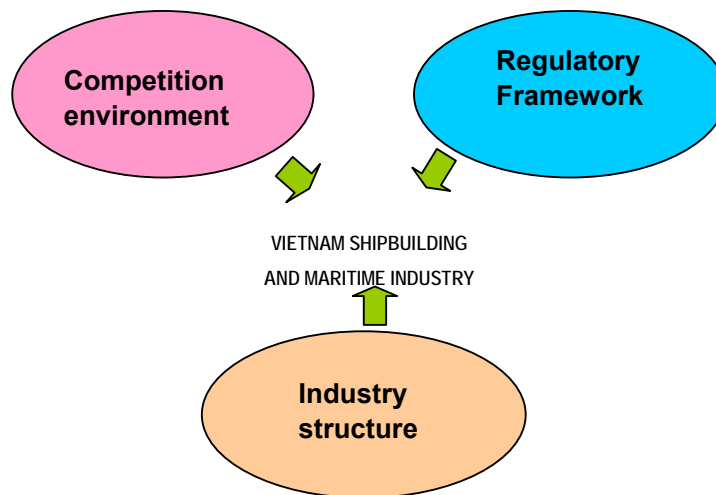
⁵³ Vinashina is Vinashin Precise Mechanical Factory. For further information, please refer to www.vinashina.com.vn

⁵⁴ The CSR Training for Vinashina was organized in 2009 by Innovation Norway Hanoi under Trade and Industry Program, financed by Norad.

⁵⁵ Competition criteria are taken from Study of Competitiveness of European Shipbuilding Industry, Ecorys, October 2009.

- Regulatory framework
- Competition environment (supply and demand)

Figure 13: Criteria for Competition Assessment



Industry structure

Vietnam has an advantage of having existing newly-built facilities for shipbuilding, which are comparable with other shipbuilding nation. The existing facilities are not only suitable for new building, but also ship-repair.

Low labour cost is the predominant strength of Vietnam. Even though Vietnamese productivity is in general low, Vietnam absolutely has advantage of building vessels. The more labour intensive the production is, the greater the benefits are of placing the work in Vietnam. From this it can be derived that high quality / complex production requiring skilled workers is very well suited. And it must be mentioned that the low productivity most probably comes from weak management and planning rather than the workers⁵⁶.

However, Vietnam maritime supportive industries are not as developed as shipbuilding facilities. As mentioned above, most of the ship's material and equipment are imported, which make the local content less than 30% of the vessels. Vinashin has a target of increasing the local content by developing local

⁵⁶ Based on informal information collected, productivity of foreign run shipyards in Vietnam are most probably significant higher than pure Vietnamese yards.

maritime supportive industry. However, with the current situation it is hard for Vinashin to achieve the target.

Furthermore, Vietnam has no in-house capacity of making most designs of vessels to be built in Vietnam. The designs are usually imported. As a result, ship equipment and material are based on standards and specification of the designer's or owner's nationality.

Similarly, Vietnam has no in-house competence of doing testing and checking. These services are usually outsourced.

Level of R&D and technology development in Vietnam shipbuilding industry is low, which gives room for improvement/international cooperation.

At present, capital is the main concern within Vietnam's shipbuilding industry. Vinashin is lacking working capital, have low credit rating and are less capable to fulfil its obligations. And Vietnam's ship-owners face difficulties to find capital for new-buildings. It is also difficult for supportive industries to borrow money from bank to expand their production.

To sum up, Vietnam shipbuilding is competitive in terms of low labour cost and good existing shipbuilding/ship-repairing facilities. However, Vietnam is not strong in design, R&D and supportive industry. Furthermore, Vietnam productivity is rather low due to insufficient management, which somehow diminishes the benefits of low labour cost.

Finally, the overall difficulty at the moment is the lacking of working capital.

Regulatory Framework

Shipbuilding and maritime industry receives highest priority from the government. A number of favourable regulatory legal documents in terms of financial incentives have been developed to support development of Shipbuilding and maritime industry. For further information about financial incentives given by the Vietnamese government, please refer to part 1.5 *Profitable and financial strength*.

At present, Vietnam has a number of regulatory barriers to protect enterprises within Vietnam shipbuilding and maritime industries. For example, Vietnam is currently protecting its domestic shipbuilding with a 10-15% import tariff on fishing and small cargo ships as well as 5-7.5% import tariff on cargo ships over 5,000 DWT; Vietnam's restrictions on second hand ship import; etc. These barriers, however, will be removed gradually according to Vietnam WTO's roadmap.

Furthermore, the government is currently backing up Vinashin to have large orders from other Vietnam state owned corporations such as Vinalines and PetroVietnam.

To date, Vietnam has advantages of having a favourable regulatory framework to support Shipbuilding and maritime industry.

Competition environment (supply and demand)

Globally, shipbuilding is now facing difficulties. Financial constraints and a general over-capacity in most shipping markets are resulting in lacking new orders, and cancelling and postponing existing contracts.

The similar situation is seen in Vietnam. According to Vinashin, 17% of its order book was cancelled within 2008-2009. On the other hand, Vinashin is now receiving more contracts from domestic ship-owners. However, timeframe of these orders is somehow uncertain. According to Mr. Pham Thanh Binh, Chairman of Vinashin Group, Vinashin has sufficient order book up to 2012. Nevertheless, the numbers, as previously mentioned must be read with care and may show a too polished image.

2. ISSUES 6: IDENTIFICATION OF BUSINESS OPPORTUNITIES

Despite the economic situation within the maritime sector, Vietnam is the destination of choice for many Norwegian⁵⁷ maritime companies. At present, a number of companies have established operations in Vietnam, or succeeded with export⁵⁸ to Vietnam, such as:

- KGJS;
- Jebsen Bergen;
- Hoegh Autoliners;
- DNV;
- Jotun;
- STX Yards;
- TTS Marine;
- Rolls Royce Marine;
- Brødrene Dahl;
- Goltens;
- Vinomarine; (Libra Plast, John Gjerde, Jets Vacuum)
- Odim;
- Slåttland;
- Sea Technology;
- Karmsund Maritimes Vietnam Pte. Ltd;
- Marinacc / Marine Møbler

As listed in the previous chapter, low labour cost is the predominant strength of Vietnam in addition to abundant access to young workers. The general low productivity can be overcome with proper management and training of the workforce. Hence, high quality / complex production requiring many man hours from skilled workers is very well suited to place in Vietnam, even though this may require some upfront investment in training.

⁵⁷ In this context, Norwegian companies may also be interpreted as international companies with value creation in Norway and where they are bringing Norwegian contents out (to Vietnam).

2.1 Possible Cooperation between Vietnam and Norway in Shipbuilding and Maritime Sector

The business opportunities for Norwegian maritime companies in Vietnam, which relate to technology transfer, include:

- (i) Place an order for new-building in Vietnam;
- (ii) Set up a shipyard in Vietnam;
- (iii) Set up production facilities to produce maritime equipment in Vietnam;
- (iv) Entering a licensing contract to produce *made-in Vietnam maritime equipments* under Norwegian trade mark;
- (v) Cooperate with Vietnam partners to develop Vietnam competence for checking, testing and after-sale services;
- (vi) Cooperate with Vietnam designer to develop ship-design competence inside Vietnam;
- (vii) Financing
- (viii) Operation and management

Place an order for new-building

Placing an order for new-building is the common way of cooperation between Norwegian and Vietnamese partners. The cooperation will not only boost two-way trading activities, but also help Vietnam to build its competence of new-building for different kinds of vessels. Usually, both sides not only look for a single contract but for long-term cooperation. For example, a contract under implementation between KGJS and Ben Kien Vinashin shipyard to build cement carrier is considered as the first step of long term cooperation between two parties. Hoegh Autoliners, with the contract with Nam Trieu Vinashin shipyard, is also looking for long term cooperation with Vinashin on building car carriers⁵⁹.

In several cases, ship-owners also take responsibilities for local training and education, technology transfer and management support, etc. such as trainings sponsored by Hoegh Autoliners for Vinashin and Vietnamese Sea Farers, after signing car carrier contract with Vinashin.

Furthermore, a building order creates opportunities for Norwegian suppliers and Norwegian experts to work for that project in Vietnam, promoting bilateral business activities between two countries.

⁵⁹ Tradewind, 9th April 2010, <http://www.tradewinds.no/weekly/w2010-04-09/article556987.ece>

Set up a shipyard in Vietnam

A number of foreign investors, including Norwegian, have decided to set up their own shipyard in Vietnam in order to build special vessels such as composite, aluminium, off-shore vessels, etc. To date, there are 05 foreign owned shipyards in Vietnam, 01 of them is Norwegian (STX Vietnam offshore Ltd.).

Similarly to placing a new order, Norwegian shipyard in Vietnam generates income for all parties. The shipyard facilitates enhanced shipbuilding competence among local employees as well as creates business opportunities for Norwegian suppliers and Norwegian experts to provide equipment/services in Vietnam.

However, the procedure for setting up a new shipyard in Vietnam is not straightforward and delays must be planned for. For example, current framework does not sufficiently cover all relevant issues relating to shipbuilding and maritime industries. This leaves room for different interpretations when implemented. Hence, local authorities such as local port authorities, fire police and safety, customs etc. may act different from authorities in several provinces. This further may generate need for consultations and involvement of central authorities. In sum, even small issues can take a lot of time, especially for major projects, which has been done first time in a province.

Set up production facilities to produce maritime equipment in Vietnam

Taking advantage of low labour cost, favourable geographical condition for shipping transportation and favourable legal framework to support production activities⁶⁰, a number of Norwegian companies have been set up their production facilities in Vietnam to produce maritime equipments, mostly for export. Examples are Odin, Vinomarine; (Libra Plast, John Gjerde Jets Vacuum) and Karmsund Maritimes.

The benefits for Vietnam from this kind of investment include: (i) increased local employment; (ii) improved skill and competence of local employees; (iii) helping Vietnam to meet its target of increase local-made proportion of shipbuilding by 60%-70% in 2015.

The benefits for Norwegian investors includes (i) reduces production and transportation cost; (ii) increase international competitiveness; (iii) diversify investment; (iv) meets local customers requirements.

⁶⁰ Favorable legal framework including: incorporation income tax holiday; exemption of export tax, etc.

Entering a licensing contract to produce made-in Vietnam maritime equipment under Norwegian trade mark

This business model brings benefits for both Norwegian and Vietnamese partners similar to setting up production facility in Vietnam, but required less initial investment. However, it is challenge to find a qualified Vietnamese partner for such kind of cooperation. And even though Vietnam has the appropriate legal framework to protect IPR, abuse of IPR is a major concern for many operating in Vietnam.

Cooperate with Vietnam partners to develop Vietnam competence for QA, testing and after-sale services

Cooperating with local partner to build up local competence for QA, testing and doing after-sale services helps Norwegian suppliers reduce cost and increase its competitiveness in an international market. This kind of cooperation is especially suitable for SME, who provide maritime equipments for Vietnam shipbuilders. Obviously, outsourcing these services to local people will reduce significantly labour and travelling costs for Norwegian suppliers. However, it is not easy to find qualify Vietnamese partners for these tasks. One reason is the lack of competence; the other is the abuse of IPR as mention above.

Cooperate with Vietnam designer to develop ship-design competence inside Vietnam

It is not easy to build-up in-house competence of designing ship in Vietnam, especially at the current global depression of the shipbuilding industry. However, using Norwegian design will more likely increase the Norwegian content of equipment and material. Japanese has a joint venture with Vinashin to make detail designs for ships. As the result, more material and equipment from Japanese suppliers are used for such design. Similarly, Korean designers were successful door-openers for Korean suppliers in Vietnam market.

There are two possible business models for cooperation between Vietnamese and Norwegian Enterprises: (i) contractual partnership; and (ii) Joint Venture. To date, no joint venture between Vietnamese and Norwegian on ship design is known.

Cooperate with Vietnam with in Financing

Norway has a very mature financial sector serving the international maritime industry. There could be room for cooperation between Vietnamese and Norwegian actors, introducing more innovative financial models and hence, make available a financial infrastructure better serving the maritime sector in Vietnam.

Cooperate with Vietnam within Operations and management

Norway's long maritime traditions and expertise could be utilized to build up Vietnamese ship owner / ship management capacity. This will then also influence in the requirements / specifications in new ships as well as introduce more modern ship management principles. One example in this context is the Jebsen Group / Vinashin project⁶¹. Here they take currently abandoned ship projects, complete them and place the ships into a new common entity. This entity will be jointly operated out of Vietnam, staffed with both Jebsen and Vinashin personnel.

2.2 Possible cooperation relating to CSR issues

In addition to a more general need for cooperation to promote CSR awareness, cooperation related to and promoting green shipbuilding and green ship repairing in Vietnam will in most cases also advance CSR awareness. Seen from the Norwegian side, the partner in the cooperation are both local business and representatives from government and local authorities. Areas for cooperation can include:

- Increase awareness among main players in Vietnam shipbuilding and maritime industries;
- Develop procedures that advance transparency and fair and ethical business culture.
- Promote Green Ship Design: encourage Vietnam shipyards and Vietnam ship-owners to select green design which can save energy, lower emission and meet other environmental requirements;
- Promote energy efficiency technologies within shipbuilding and maritime industry such as fuel switch, using silicon paint, waste heat recovery, pipe insulation, etc.
- Support Vietnam to start ship-repairing with environmental friendly procedures and green-technologies.

⁶¹ Former known as the "Calyso project"

2.3 Main Risk for Norwegian Companies doing business in Vietnam

Possible risks can be classified into: (i) business and commercial risk; (ii) administrative/regulatory risk; (iii) technical risks;

Business and Commercial Risk

- Due to financial difficulty, Vinashin is probably incapable of fulfilling its obligations under signed contracts with Norwegian ship-owners and Norwegian suppliers;
- Cash within the Vinashin Group does not flow to right projects / yards;
- Financial risk due to delay;
- Delay risk due to political intervention;
- Delay risk due to mismanagement of Vietnamese partners;
- Exchange rate risks;
- No suitable bank in Vietnam to provide guarantee.

Administrative/regulatory Risk:

- Delay risk due to long approval procedures from local authorities for a single issue (launching, use of jetty, access to tugs, pilots etc.)
- Delay risk due to difficulty on custom clearance;
- Delay deliveries of equipment, parts;
- Regulatory risks due to Vietnam legal framework. Current framework does not sufficiently cover all relevant issues relating to shipbuilding and maritime industries such as no new register available in a number of provinces, no appropriate regulation for import of special safety equipment/telecommunication equipment, etc.
- Bureaucracy and bribery risk.
- Transparency risk: this latter also touch into the field of transparency. Gifts and “kick backs” is not uncommon as part of the business culture, use of middlemen, agents and consultants to get orders creates less room for transparency. And it must be mentioned that Vietnam is very low on

the “Transparency International’s” corruption index. Corruption is perceived widespread. Vietnam ranks 121st out of 179 countries in Transparency International’s Corruption Perceptions Index for 2008⁶².

Technical Risk

- Failure of Launch
- None performance due to failure to meet design expectation;
- Mishandling of equipment;
- General housekeeping inside shipyards
- Physical damage risk: welding, hot work, etc.

2.4 Relevant support schemes for private sector engagement (both from GOV and Norwegian)

Support from Vietnamese government

- Restructure shipbuilding industry including: increase competitiveness among Vietnamese shipbuilders (none-monopoly); stronger control on financial management of state own shipbuilding enterprises; mobilize resources to focus on profitable and value-added businesses within shipbuilding industry; stop loss and none- added-value businesses; strengthen management skills among shipbuilding industry; etc.
- Prepare a master plan for shipbuilding and maritime industry, which meet to a new global context and in-line with Vietnam development plan;
- Develop human resources among shipbuilding industry including management skill, vocational training, etc.;
- Promote development of maritime supportive industries in order to increase Vietnam shipbuilding industry added values;
- Streamline administrative procedure to promote foreign investment in shipbuilding and maritime industry.
- Streamline administrative procedure to ease the operations in the shipbuilding and maritime industry.

⁶² One example: In December 2008, the government of Japan announced that it was suspending low-interest loans until Vietnam takes “meaningful” steps to eliminate corruption in public works programs.

Support from Norwegian government

In addition to the traditional Government assistant capacity building, Vietnam also requires hand-on technical and management support. This could be efficiently handled through technology transfer by and cooperation with Norwegian companies. The structure of Business Match Making Program (BMMP) could be a good foundation for further expansion.

- Support for Norwegian companies doing business in Vietnam by grants for vocational and management training of their local employees;
- Consider to provide advisory assistance to Vietnam on preparing master plan for shipbuilding industry, restructuring shipbuilding industry, streamlining procedure to promote private/foreign investment in shipbuilding and maritime industry, streamlining procedure for operations, procedures for improved transparency etc.
- Consider to provide technical assistance to main players in Vietnam shipbuilding industry about green shipbuilding and green ship repairing.
- Provide financial support to Vietnamese industry participating in R&D with Norwegian companies.
- Provide financial support to Vietnamese industry participating in BMMP, typically to be able to invest in new technical infrastructure and knowledge to support the business case with the Norwegian partner.
- Provide soft loan for initial capital investment;
- Increase the number of Vietnamese students to Norway relevant for the maritime- and O&G industry.
- Setting up entities as “Norwegian centre of expertise in Vietnam” where Norwegian companies are invited to participate.

ANNEX 1: LIST OF MARITIME SUPPORTIVE ENTERPRISES IN VIETNAM

No	Company	Address	Products/Activities	Remarks
1	CMS	29A Alley 109 Trường Chinh Str., Thanh Xuân Dist.	Trading in construction equipment, generator and equipment for ship. Trading in automatic and control equipment	
2	MARINE MACHINE, ELECTRIC AND ELECTRONIC CO. (VINAMAREL)	To 6, Lang Thuong, Dong Da	Mechanical installation and design	Vinashin Group
3	SHIPBUILDING INDUSTRY INVESMENT IMPORT EXPORT CORP.	57 Bến Bình Str., Minh Khai Ward, Hồng Bàng Dist.	Supplying maritime services, old ship dismantlement, general import-export	
4	VINASHIN TRADING & MANUFACTURING J.S.C (SHINEC)	Km94+500, New Highway 5, Nam Son Hamlet, An Dương Dist.	Interior-boat decoration. Civil interior trading. Processing non-standard steel. Industrial & civil construction	Vinashin Group
5	SEJIN - VINASHIN MARINE ACCOMMODATION CO.,LTD.	An Hồng Ship Building IZ., An Dương Dist.	Producing & trading in marine accommodation, interior - boat decoration	Vinashin Group
6	ASIAN DRAGON ALUMINIUM COMPANY	No.215A, 208 Road, Tam Quán IZ., An Đông Ward, An Dương Dist	Ship building of all kinds. Production & manufacturing of alloy aluminium	
7	COMPOSITE MATERIAL MANUFACTURING CO.,LTD.	Square 75 Trần Nhân Tông	Manufacture of ship & boat, float made of plastic	
8	HOANG THO DUC CO.,LTD.	Group 13, Xuân Trường Townlet, Xuân Trường Dist.	Trade of metal ware, Ship and boat building and repair	
9	THANH HOA SHIP MECHANICAL APPLIANCES J.S.C.	Trung Thịnh Village , Quảng Tiến Hamlet , Sầm Sơn Town	Ship and boat building and repair. Sea products processing	
10	MECHANICAL ENGINEERING J.S.C No.2	135 Trần Trọng Cung Str., Tân Thuận Đông Ward, Dist. 7	Construction. Ship building. Producing and installing waterway transport signs and signals	
11	EDEN VINA CO.,LTD.	G52-K300 Cộng Hòa Str., Ward 12, Tân Bình Dist.	Trading in spare parts of fishing ship	
12	TAN VIEN DONG CO.,LTD.	180 Nguyen Van Luong Str., Ward 10, Dist. 6	Design & product kinds of ships. Producing composite plastic products	
13	QUOC MINH MARITIME MECHANICAL TRADING CO.	299-301 Huỳnh Tấn Phát Str., Tân Thuận Đông Ward, Dist. 7	Ship building and repairing. Trading in ship and boat spare parts	
14	TUONG MINH CO.,LTD.	298 Str.3-2, Ward 12, Dist. 10	Industrial & commercial cleaning equipment: Sweepers, Scrubbers, Floor machines, high pressure washer, vacuum cleaner...Safely equipment & Environmental Materials: Filter fabrics, pulse valves - Heat resistant fabrics - Hazardous gas meter -	
15	SONG ANH CO.,LTD.	4/54 Nhị Tân 2 Hamlet, Tân Thới Nhì Commune, Hóc Môn Dist.	Trading in transportation equipments and material. Shipping agency. Repairing ship, drilling rig, lifting equipments, refractory equipments	

16	TRANSPORT SCIENCE TECHNOLOGY APPLY AND CONSULTANTS CO.	2 Road D3, Văn Thánh Bắc Str., Bình Thạnh Dist.	Consulting design of means of transport, transport facilities and derricks(drilling platform). Shipping agency and forwarder. Organizing forums to introduce topics of science, research and application of advanced to national education and transport	
17	THAO INTERNATIONAL CO.,LTD.	2-4/222/11 Điện Biên Phủ Str., Ward 22, Bình Thạnh Dist.	Supplying deck and engine stores safety equipment and	
18	NEW VIET HAN COMPOSITE CO.,LTD.	Lot A4, Minh Hưng Hàn Quốc & Minh Hưng IZ., Chon Thành Dist.	Production and trade of products made of Composite material	Korea
19	KIEN GIANG COMPOSITE CO.,LTD.	1308 Nguyễn Trung Trục Str., An Hoà Ward, Rạch Giá Town	Specialized in manufacturing fiberglass speed boat, water tanks and customized products. Authorized distributor Mercury Outboard	
20	Southern Shipbuilding Design and Consulting J.S.C	56/1 Nguyễn Thông, P.9, Q.3	Ship design, building and consulting	Vinashin Group
21	Hong Bang Shipbuilding Industry and Construction Company	Số 1 Đường Hà Nội - Thượng Lý	Ship demoliton	Vinashin Group
22	Vinashin Materials and Equipments	Số 4 Phan Đình Phùng - Hồng Bàng	Import, export shipbuilding materials, equipment, ship demolition	Vinashin Group
23	Phi Hung Co., Ltd	8 My Dong, Thuy Nguyen	Manufacturing propellers and mechanical products for ship/boat	
24	Hamasco	5151 Dien Bien Phu Street, Ward 25, Binh Thanh District	Steel wire ropes, synthetic ropes, alloy steel chains and related fittings, slings, anchors, accessories, ringing hardwares, lifting gears...	
25	Middle Area Construction and Shipbuilding Industry	396 Dien Bien Phu	Shipping materials and equipment	Vinashin Group
26	Marine import - export supply J.S.C	55-57 Hoang Dieu, District 4	Mooring rope, Steel wire rope, Marine engine, generator & Engine parts, Equipments for cargo and container securing, Anchor and chain, Marine safety and live saving equipments, Fresh provision for use on board.	
27	PNT Maritime Engineering Services & Trading Co., Ltd	210 Nguyen Tat Thanh Street, Ward 13, District 4	Engine store, deck store,safety marine equipments, electric equipments, Oxygene – Acetylene – Freon 12 & 22. Gease, Zinc Anodes and Aluminium Anodes, provide provisions, fresh water and ship cleaning services	
28	SONG ANH S.G MARINE & INDUSTRY CO., LTD	Room 91 Duy Tan Palaza, 171 Cao Thang Street, Ward 12, Dist 10	supplier in the range of Marine Equipment, Industrial Equipment, Spare Parts for all kinds of Marine & Industrial Engines, Generators, Air Compressors, Pumps, Oil Purifiers and	
29	Vinashin Precision Engineering J.S.C (Vinashina)	Lai Vu, Kim Thanh	Hydraulic cylinderr and systems, steel stuctures, hot-dip galvanized products, steel grit, crane, working lines for shipyards...	Vinashin Group

30	Vinashin Electric J.S.C	109 Quan Thanh, Ba Dinh	Electric equipment for ships	Vinashin Group
31	Foundry Company No.1	220 Binh Thoi Str. - District 11	Founded metals: Gray iron, ductile iron, spheroidal graphite iron, alloy cast iron. Carbon steel, stainless steel, copper alloy, aluminium...	
32	Vinashin Casting Joint – Stock Company (INCASHIN)	Trung Quang Hamlet, An Dong commune, An Duong District	Providing various casting products such as bronze propellers and shaft-bearings in bronze and in plastic etc for domestic shipbuilding companies	Vinashin Group
33	Hai Phong Shipbuilding Industry Co., Ltd (HASHIN)	312 Nguyễn Bình Khiêm - Đằng Giang - Ngô Quyền	Ship equipment: fans, air pressures, engines...	
34	Vinashin shipping paint J.S.C	149/1H Ung Văn Khiêm	paints for ships	Vinashin Group
35	Petroleum Trading and Technical Services Company Limited	Office: 7 th Floor Miss Aodai Building 21 Nguyen Trung Ngan St, District 1	Design, fabrication, installation, inspection, repair and maintenance	PetroVietnam's sbusidiary
36	Nam Trieu Welding Material Industry Co.	Tam Hung village, Thuy Nguyen District	Manufacturing and trading in welding comsumables	Vinashin Group
37	Nam Trieu Electrical Technology J.S.C	Tam Hung village, Thuy Nguyen District	Manufacturing, supplying, assembling and repairing marine and civil electri equipment,	Vinashin Group
38	Nam Trieu Lifting Equipment Manufacturing J.S.C	Tam Hung village, Thuy Nguyen District	Designing and manufacturing lifting, hydraulic equipment	Vinashin Group
39	Song Chanh Shipbuilding Industry J.S.C	2 B Hamlet, Ha An village, Yen Hung District	Newbuilding stell hull vessels	Vinashin Group
40	Nam Trieu Trading & Production J.S.C	B 13, Nam Long, Tran Trong Cung, Tan Thuan Dong ward, District 7	Manufacturing welding equipment and consumables, vessel spar parts and accessories.	Vinashin Group
41	Pha Rung Technical Services J.S.C	Room 15, 5th Floor, Thanh Dat Building, 3 Le Thanh Tong	Manufacturing, supplying, technology tranfer shipbuilding	Vinashin Group
42	Viet Thanh Electrical Mechanical Industry and Construction J.S.C	98 Nguyen Binh Khiem, Phuong Luu I Block, Dong Hai Ward, Hai An District	Manufacturing electric equipment for shipbuilding, casting and producing ferrous and non-ferrous	Vinashin Group
43	Hai Phong Electric and Refrigerant Technology J.S.C	No. 5 Nguyen Tri Phuong, Minh Khai Ward, Hong Bang District	Manufacturing, sourcing steel structures for shipbuilding industry, cooling systems.	Vinashin Group
44	Steel Structure and Lifting Equipment J.S.C	Khu Cong Nghiep Phuc Dien, huyen Cam Giang	Manufacturing lifting equipment	Vinashin Group
45	Hanoi Mechanical Company	74 đường Nguyễn Trãi - Quận Thanh Xuân	Manufacturing Mechanical equipment	
46	Lien Sanh Propeller Manufacturing and repairing	37 Mai Xuân Thường, Ward 3, District 6		
47	Hai Giang Co., Ltd	4 Gò Ô Môi Street, District 7	Mechanical products for ships.	
48	Ha Long Shipbuilding Industry and Construction Company	Đường Phạm Ngũ Lão - Phường Yết Kiêu - Hạ Long		Vinashin Group

50	Hải Phòng Shipbuilding Industry Joint Stock Company	312 Nguyễn Bình Khiêm - Đằng Giang - Ngô Quyền		
51	Marine Engineerings Joint Stock Company	174 Trưng Nữ Vương		
52	Ngo Quyen Shipbuilding Industry Company	234 Đường Ngô Quyền - Chùa Vẽ		
53	SongHongshinco Co., Ltd	Room 12, 1st Floor, A building, 109 Quan Thanh, Ba Đình	Shipbuilding, repairing, floating equipment. Manufacturing steel structures...	
54	Aalborg Industries Co. Ltd	An Hong Marine Industrial Zone, An Duong District	Ship boilers	Denmark 100% Foreign investment
55	Nakashima Co. Ltd	Dinh Vu IZ	Propellers	
56	Goltens Vietnam Co. Ltd	Suite # 118, TECASIN Complex, 243-243B Hoang Van Thu Street, Tan Binh District	Goltens is a leading provider of specialized repair, maintenance, reconditioning services and trading of engineering components for the worldwide shipping , offshore marine installations, industrial plants and	Norway 100% Foreign investment
57	Duyen Hai Mechanical Co. Ltd	133 National Road 5, Quan Toan Ward	Roughing and machinery processing with modern and advanced equipment Fabricating and installing equipment, large size and weight. K61 The Company has two joint ventures with foreign companies/partners in the field of casting the high quality products and fabricating super magnetic and super machinery products	
58	Mechanical & Industrial Construction J.S.C	929-931, National road No.1A, Thoi An ward, District 12	Fabrication & installation of mechanical works. Fabrication & erection of steel structures Supply and installation of low and medium voltage electricity stations Supply and installation of boilers and	

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