
Executive Summary

1. The importance of the yacht building and repair industry along the Andaman Coast

Thailand is one of the most popular tourist destinations in the world due to its beautiful beaches and coastlines, and for the past decade, the serene Andaman Coast have attracted an increasing number of wealthy tourists and their expensive and luxurious yachts. According to recent surveys, as many as 5 million tourists visited Phuket in 2007, the most of any of the provinces in Southern Andaman coast of Thailand. There are significant indications that not only will there be more tourists visiting the Andaman Sea, but also more patrons visiting Phuket to build new yachts or get their yachts repaired because of the excellent Thai craftsmanship and the low labor cost. Nonetheless, if there is more support from the Thai authorities in developing this industry, Phuket could see a staggering increase of at least 5,000 yachts per year. This increase will have a significant impact on the yacht building and repairing industry which is currently worth more than 5 billion baht since it is interconnected to major industries such as iron and steel fabrications, communication and navigation devices, paint and chemicals, machineries, ship engines, electrical and electronic devices, and wood frames and interior furniture. .

2. An overview of the yacht building and repair industry along the Andaman Coast

The yacht building and repair industry is linked to many other industries according to the supply chain analysis shown in Figure 1. With the yacht building and repairing docks being at the center, the supply chain consists of 4 main parts: (1) dock companies, (2) the demand side, (3) the supply side, and (4) supporting agencies. Moreover, there is also the existence of ready-made yacht companies who have competing interests. The yacht building and repair industry encompasses the six Andaman provinces of Phuket, Ranong, Phung Nga, Krabi, Trang, and Satun.

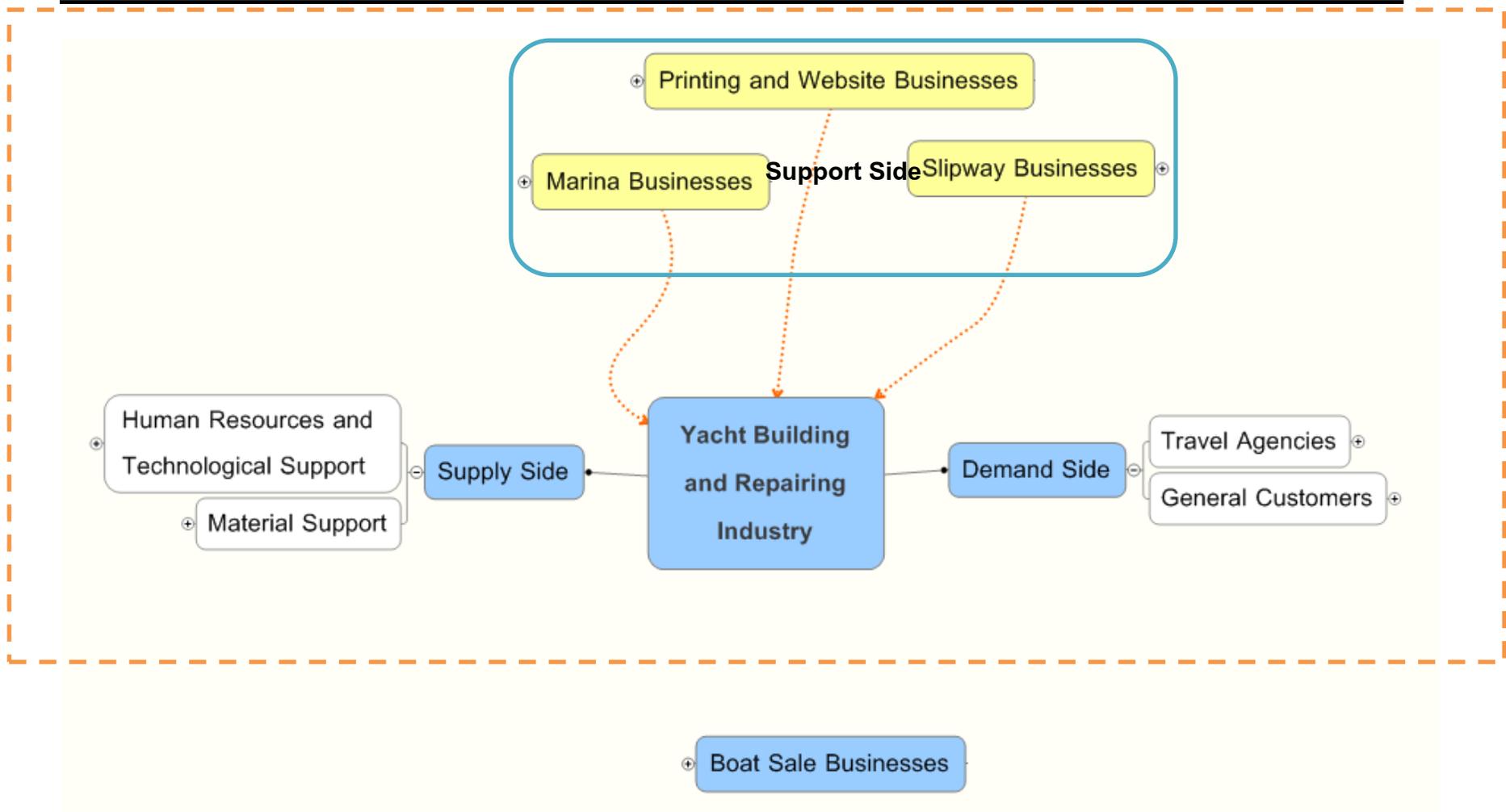


Figure 1: Supply chain for yacht building and repairing industry.

When considering the capacity of the yacht building and repairing industry in the Andaman Coast, the following analysis can be obtained:

- **Number of yachts:** The number of registered yachts along the Andaman Coast is 831 ships or about 16.75% of the total number of yachts in Thailand which is 4,962 ships. Moreover, in 2010, a recorded 1,334 yachts entered Thai water through the provinces along the Andaman Sea.

- **Information on yacht building and repairing docks:** Currently, there are a total of 14 building and repairing docks out of a total of 39 docks located along the entire Andaman Coastline (approximately 35.88%). The highest number of yacht building and repairing docks is located in Phuket followed by Ranong and Satun as these areas are major tourism destinations. Not only do these docks have the capacity to build and repair ships made of steel, wood, and fiberglass with sizes ranging from 3-350 tons gross, but they can produce as many as 1,357 ships per year.

- **Demand side for yacht building and repairing docks:** The demand for this industry stems from two major sources: (1) tour companies and travel agencies and (2) general customers. The demand side analysis can be summarized according to the following structure shown in Figure 2. Firstly, tour companies can be subdivided into charter tours and sea travel tours. Secondly, general customers would include groups from governmental agencies, yacht clubs, and sea travelers.

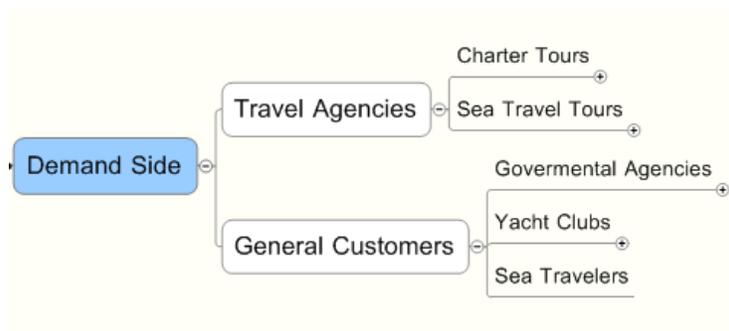


Figure 2: Structure of demand side for yacht building and repair industry.

● Supply side for yacht building and repairing docks: The suppliers have a general purpose of supporting the industry by providing labor and materials for yacht building and repairing. This supply side can be divided into 2 major categories: (1) labor and technological support and (2) material support. In the first instance, the labor and technological support can be further divided into different layer of complexity as shown in Figure 3, including engineers, technicians, craftsmen, manual labor, and shipmates. On the other hand, the material support range from electrical and electronic devices, navigation and motor drives to ship building and furnishing materials.

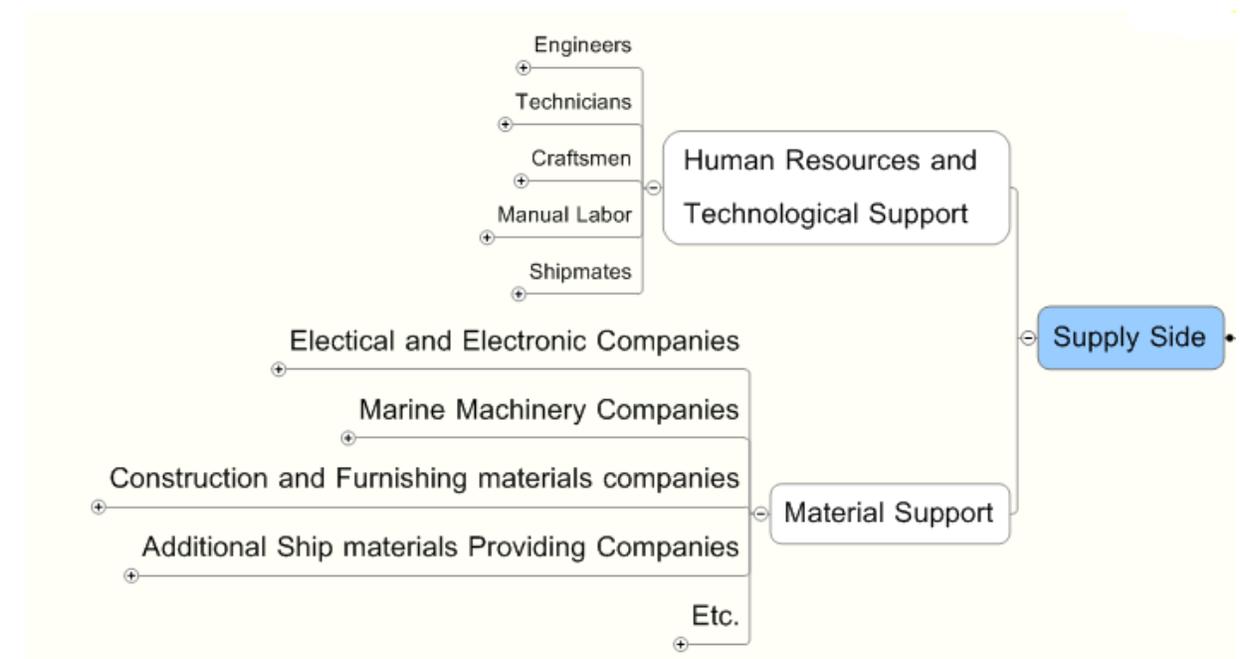


Figure 3: Structure of the demand side for yacht building and repairing industry.

● Supporting companies for yacht building and repairing industry: In order to provide a linkage between docks and yacht owners, companies involved in printing presses, web designers, public relations, and marina and dock owners must all play an integral part in the success of this industry.

3. Informational technology (IT) system for the yacht building and repairing industry

3.1 Design of an information technology system

The structure of the IT system for supporting the yacht building and repairing industry shown in Figure 4 will be developed as a web application and displayed in a website format. The website will be consisted of 7 sections as followed: (1) Repair/Builder, (2) Suppliers, (3) Marina, (4) Yacht Charter companies, (5) Rules/Policies, (6) General Information, and (7) Web Board. The Rules/Policies section will include customs regulations and operating procedures listed by the Marine Department for the request for payment receipts, vessel licensing, registration, and renewal, certificate of vessel ownership, captain licensing, seaman licensing, certificate of checked vessel, permission to use vessel for the first time, permission to construct objects encroaching public waterways, and permit to release wastewater into public waterway just to name a few. In the general information section, the website will provide content on weather forecasts and sailing forecasts, favorite travel destinations, and news from Yachting Magazine (available at: <http://phuketmarine.org/english.htm>, <http://vigportal.mot.go.th/>). Finally, the Web Board section will be used to crate networking between yacht builders/repairers and related yachting businesses.

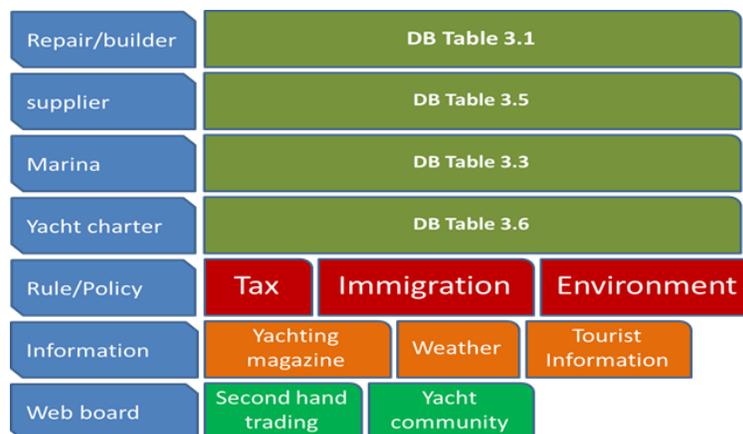


Figure 4: Structure of the information technology system for yacht building and repairing industry.

4. Recommendations for the development of an information technology system for yacht building and repairing industry.

From having the opportunity to speak with groups of dock owners and gathering information on the development of an information technology (IT) system for yacht building and repairing industry in foreign countries, the following recommendations have been suggested for the establishment of an IT Center in Thailand:

4.1 The IT Center will be most beneficial when a partnership has been established between various dock owners. In this scenario, yacht owners will be able to communicate directly to IT Center and obtain all services available including selecting and reserving which dock they would like to get their repairs from, while also being able to order parts in advance of bring their yachts in for repair. On the other hand, dock owners will also be able to advertise sales of yachts and luxury ships via the IT Center similar to an on-line hotel reservation system.

4.2 The IT Center will provide information on sources for raw materials and parts for yacht building and repairing in order to for dock owners to be able to purchase these items quickly and at a reasonable price.

4.3 The IT Center should be linked directly to other related IT networks such as the electronics portal of the ministry of transport, an electronics arrival and departure system, an electronics customs service, and even a joint IT system that records ships entering and leaving Thai waterways.

4.4 The IT Center will be kept up-to-date in order to keep its records accurate and reliable by the Faculty of Engineering, Prince of Songkla University. The Faculty will serve as the web administrator and watch over its network.

4.5 Development a program for training individual dock owners on the usage of IT system or assist in the construction of a website that will be linked to the IT Center in order to share information on-line and in real-time.

4.6 In order to fully utilize the IT Center to its maximum capacity and to continuously develop the IT Center, the group of dock owners should eventually be in charge of managing the IT Center directly. For example, an association of dock owners along the Andaman Coast should be established and be responsible for updating the IT system while also covering its maintenance cost in the future.

5. Strategies for establishing a collaboration between dock owners, marina owners, and related organizations

5.1 Develop an IT system as a center for communication and networking between dock owners, marina owners, and related governmental agencies. This interactive system will be similar to fast-growing online social network (i.e. facebook and twitter) that will allow all members to exchange information, products, and services. This type of service requires low investment and can quickly reach out to a wide range of customers.

5.2 Encourage and push forth the creation of an association between dock owners, marina owners, and related organizations. This association should be supported by local authorities and be established similar to the Thai Hotels Association.

5.3 Distribution of e-mails providing updated news and information for yacht building and repairing dock owners.

5.4 Suggest to governmental agencies or local authorities the establishment of supporting regulations and policies in a concrete manner. For example, tax exemptions on imports of certain types of materials could be setup, while government agencies should assist with job placements of yacht building and repairing craftsmen. Furthermore, these agencies should also organize exhibitions and trade fairs to demonstrate the creativity and quality of Thai craftsmanship in yacht building and repair.

6. Suggestions for the development of a successful yacht building and repairing industry

Even though the yacht building and repairing industry is just beginning to play an important role in the overall Thai economy, but it is without a doubt linked to and connected to many other industries in Thailand. In general, dock businesses arise from repair shops for small fisherman boats. In time, these shops gradually expand to meet the demands of larger ship repairs, and finally, after gaining substantial experience, they are able to enter the ship building business. Thus, after gathering pertinent facts regarding this business, the team of researchers has proposed the following suggestions and methodologies for the development of the yacht building and repairing industry in Thailand.

6.1 Recommendations for Development of Ship Building Personnel

From the information obtained regarding human resources involved in the yacht building and repairing industry, all personnel can be divided into 2 groups: (1) craftsman or technicians and non-craftsman. According to Table 2-11 (in Full Report), there is a significant shortage in the number of craftsman as technicians and as engineers as a result of a lack of study program directly related to the yacht building and repairing industry. Consequently, the team of researcher has offered the following ideas for the development of human personnel in each of these areas:

1) Technicians

From literature review, there are a total of 3 institutions that currently offer programs in ship building. The list is shown in Table 4-8 (in Full Report) and includes (1) Nakhon Si Thammarat Seaboard Industrial College, (2) Phra Nakhon Si Ayutthaya College of Boat-Building and Technology, and (3) Nongkhai College of Boat-Building Industrial and Technology. However, from discussions with dock owners, technicians who work in this business are seldom graduates from these institutions. On the contrary, these workers often come from technical colleges and develop ship building and repairing skills at the dockyards. There are also many others who do not have

any degree, but through hours of training and practices, become experienced in their crafts and are able to sufficiently work in these dockyards.

Therefore, in order to meet the demands of expanding yacht building and repairing industry, a core-curriculum should be jointly developed between dock owners, the 3 institutions above and various technical colleges along the Andaman Coast. This curriculum must first and foremost meet the needs of the yacht building and repairing industry while also offer a practical training program for students at the individual dockyards. In addition, research projects could be developed between the educational institutions and the dock owners accordingly.

Nonetheless, in order to solve the current problem of technician shortages, the Department of Skill Development should offer intensive training programs to raise the skill levels of current workers, for example, in welding and painting.

2) Engineers

Currently, there are 2 higher educational institutions that offer engineering programs related to this area: (1) Chulalongkorn University and (2) Kasetsart University according to Table 4-7 (in Full Report). These programs, however, do not focus directly in yacht building and repairing and only a handful of graduates leave these universities per year. Consequently, this small number cannot meet the demand of the expanding yacht building industry. As for Southern Thailand, there is no institution that currently offers an engineering program in ship building. Therefore, the team of researchers has suggested that an engineering curriculum in ship building and repairing be developed at the Prince of Songkla University (PSU). This program should be offered at the PSU - Phuket Campus, and the PSU - Trang Campus as both are situated near dockyards for yacht building and repairing.

6.2 Legal Suggestions

From the gathering of information, in addition to problems with human resource, there is also a significant problem with Thai laws and regulations. Thus, changes should be made in this area involving dock owners in order to clarify vague issues and push new regulations that can

support the rapidly expanding ship building industry. The team of researchers has suggested the following:

1) The government should reduce import taxes on machineries, materials, and equipment for yacht building and repairing because the tax percent for each item differs significantly. As a result, prices for some raw materials and equipment are exceedingly higher than those in our neighboring countries.

2) Government agencies (dealing with customs) should improve the efficiency in importing and exporting machineries, materials and equipment for yacht building repairing in order to make it more convenient and increase the speed of these procedures. Currently, the procedure involves a hefty number of paperwork regarding the importing of such items which takes a long time for checking and processing.

3) The government should support new laws for the establishment of dockyards along the Andaman Coast. At the present, there is a dilemma in finding suitable location for dockyards along the Andaman Coast. Even though the Ministry of Natural Resources and Environment strictly prohibits the establishment of factories in the National Parks area, there is a need for re-evaluation of such restrictions due to the increasing traffic of yachts and super-size yachts into Thai waterways according to Table 2-14 (in Full Report).

4) There should be a modification in the current duration of stay for foreigners in Thailand and their yachts in Thai waterway in order to make them more compatible and practical. Currently, foreigners are allowed to stay in Thailand for only 1 month while the Customs Office allows ships and yachts to stay in Thai water up to 6 months.