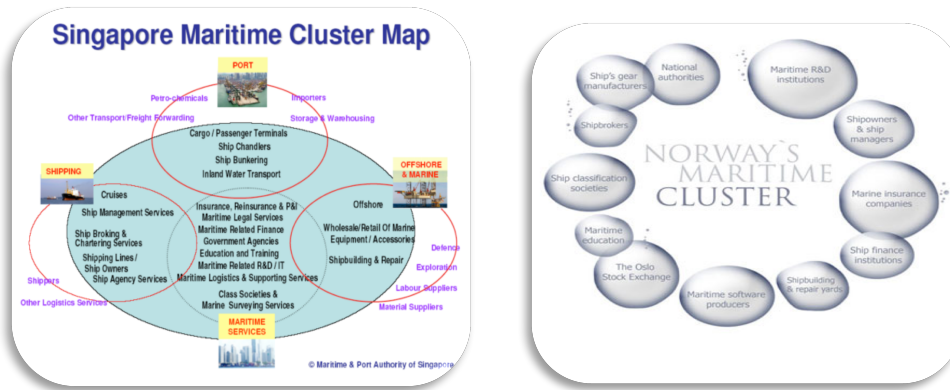


1 (a)



1. Shipowners: shipowners are buyers of ships, so they are the main capital source of shipbuilders.
2. Classification society: Classification society is a non-governmental organization that establishes and maintains technical standards for the construction and operation of vessels and offshore structures. It carries out regular surveys to ensure vessels are compliant with all standards.
3. Shipbrokers: Shipbroker is the middle man to settle the trade between shipbuilders and shipowners. They facilitate the negotiation of the contract terms and legal issues.
4. Raw material suppliers: shipbuilders need to buy the raw material from outside, such as iron, some machinery, ship paint, etc. The fluctuating of raw material will significantly influence the profit margin of shipbuilders. Therefore, shipbuilders should establish a strong connection with main raw material suppliers.
5. Maritime software producer: the operation computer system, monitoring computer system, central management computer system of the ship are always purchased from Maritime software producer by the shipbuilders.
6. IMO and other international organizations. IMO work out international regulations, guidelines and work procedures for the shipping industry including shipbuilders. Shipbuilders must comply the regulations of IMO, so the ship can pass the inspection of the classification society. And then the ships can sail and earn revenue for the shipowners. Some IMO regulation examples are “double hull” and “Sulphur content of fuel oil”. The shipbuilders must not use single hull and must ensure the machinery can burn the stipulated kinds of fuel oil.

(Choose 5 of them)

1 (b)

1. Having qualified crew who have been adequately trained and understand their job roles
  - Formal training mostly in schools (e.g. Singapore maritime academy)
  - Specialised training to meet manager’s or ship’s requirements arranged by ship manager
  - Upgrading training (formal) also provided in schools
  - Upgrading training (manager’s/ship’s requirements) provided by ship manager
2. Maintaining the ship’s condition. Having proper system of communication, monitoring and feedback (including the right culture)

- Regular inspections, checking for Corrosion, Cracks, Damage
- Chipping/painting
- Plate/frame renewals in dock or afloat

#### Machinery

- Regular inspections/monitoring/tests
- Servicing/overhaul/trouble-shooting
- Repair/replacement

#### Planned maintenance system (PMS)

- Regular inspections (e.g. Tanks, holds, pipes)
- Regular servicing (lubrication, replacement of parts)
- Overhauling (opening up)
- Planned maintenance vs condition monitoring

#### Trading certificates are valid

Ship safety certificates under international conventions (Cargo ship safety construction certificate, Cargo ship safety equipment certificate, Load lines certificate, Passenger ship safety certificate)

#### Classification certificates

Where relevant, customers' requirements also to be met

#### Special local requirements

### 3. Ensuring that ship is properly managed

- Meeting owner's requirements
- Meeting statutory requirements (SOLAS)
- Ensuring adequate supplies (food, consumables, spares)

### 4. Earning revenue from the operation of the ship

E.g. Chartering out the ship  
Various strategies

### 5. Having adequate manuals for safe management, health, security and protecting the environment

#### 1 (c)

1. Hydrographical aspect: nautical chart of Singapore territorial sea.
2. Weather report over the Singapore Sea and the vicinity
3. Report and alert of tides and currents
4. Shipping routes management. Prevent ship collision.
5. Firefighting services
6. Protection against terrorism
7. Guarantee of the quality and quantity of the bunker. Singapore government have legislated many regulations and guidelines against bunker cheating crime.

#### 2(a)

Absolute Advantage refers to a commodity that one country has in exportable quantities which another country has none. It is either as a result of climate or geology. For example, Bananas and coffee cannot be produced in N. Europe while they are in abundance in West Indies and Brazil, etc.

Comparative Advantage refers to one country produces a commodity more cheaply or in a more desirable form than another. It is either a result of climate or geology.

Some factors of production, including Land, Labor and Capital.

Globalization plays an important part to the demand and pattern of trade.

2(b)

iron ore, bauxite, grain, coal, phosphates, alumina

(Choose 5 of them)

3(a)

Factors affecting the price of new vessels

1. Demand for and supply of seaborne trade: demand and supply is the most critical and influential component of the pricing mechanism. If the demand is high, the price will increase. If the supply is high, the price will plummet.

2. Expectation on freight rate as well as second-hand vessel price. If the expectation on future freight rates is high, the demand will increase and thus the price will rise. If second-hand vessel price increases, it means that the supply outweighs the demand in the market. Therefore, the price will rocket up.

3. Steel price: steel is the most expensive component of a whole ship. Therefore, if the steel price increases, the ship price will go up accordingly.

3(b)

The basic reason for increasing demolition for ships is that the supply of ships far exceeds the demand of ships in the market. Therefore, the freight rate is in the trough of the shipping cycle and the recession is expected to sustain for some time. So the expectation of the near future market is also negative. Thirdly, most ships are financed by debt. The shipowners need to pay back the debt periodically. Some shipowners may not be able to cover the capital cost from the freight revenue and choose to scrap the ship to make the last money.

Because some small and weak shipping companies and shipowners declared bankruptcy and the total number of ships decreases to the normal level, the future freight rate is expected to increase. It is a good phenomenon for the rest shipowners and shipping companies, but it is also the bad news for shippers.

4(a)

Crude oil is transported to the refinery first. Then the residue oil is produced after extracting useful oil products. Then the residue oil may be mixed with other kinds of oil or be processed to satisfy the regulations, such as Sulphur content regulations. Then the bunker fuel is sold to shipowners through or may not through brokers. The last step is to measure the weight of fuel (through mass meter or volume method or other methods) and transport the fuel into the bunker tanks.

Some other key players

1. local environmental agencies: regulate the bunkering industry, ensure the quality and quantity of the fuel oil.

2. International organization (such as IMO): enact international regulations such as Sulphur content and ECA.

3. brokers: facilitate the deal by checking the quality and quantity of the fuel, drafting contract, dealing with legal issues.

4. surveyors (or laboratories): check the quality of the fuel and the content of the fuel. Evaluate the impact of the fuel to the ship machinery.

(b)

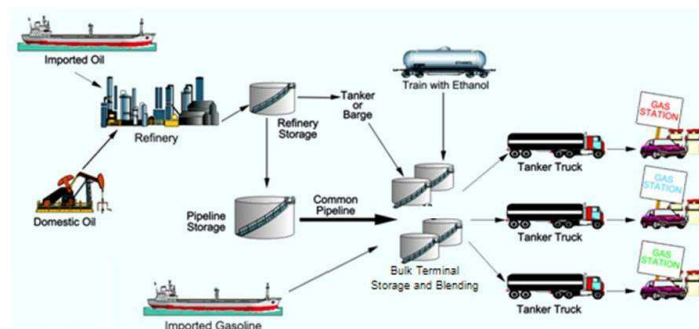
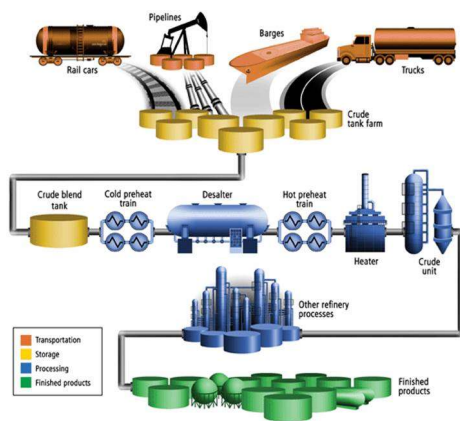
1. Singapore companies (Keppelfels, Jurong shipyard) are the main Rig builders and Shipbuilders of the world because of the edge-cutting technology and sufficient experience.

2. Singapore as suppliers. Singapore firms also produce high quality of offshore Supplies such as ropes, bridges, machinery, etc)/marine base.

3. Singapore also provide specialized Training to mainly seafarers and supply crew and talent to the offshore industry
4. Singapore owners of OSVs is one of the largest groups of OSV owners in the world.
5. Service suppliers (class, surveyors, consultants)
6. Singapore offer Financial solutions to purchasing the offshore equipment and provide legal services to settle disputes.

5(a)

Liquid bulk commodities can be originated from land or sea by fixed platforms, semisubmersible rigs, FPSO, etc. Then it is transported to the crude tank farm of the refineries by rail cars, pipelines, barges or trucks. Then the liquid bulk cargo is processed in the refinery. Lastly, the finished goods are transported out by rail cars, pipelines, barges or trucks.



5(b)

i  
Draft – the distance from the water level to the keel of the vessel

ii  
Deadweight Tonnage measures of how much weight a vessel is carrying or can safely carry including cargoes, fuel, fresh water, ballast water, stores, passengers, crew, etc. The plimsoll line indicates the maximum permissible deadweight tonnage when the vessel is loaded  
Unit: ton (T)

iii  
Gross Tonnage measures of a vessel's overall internal volume, i.e. the enclosed spaces within the vessel  
Unit: dimensionless, only an index

iv. Aframax vessels are a kind of Liquid Bulk Tanker, which are 80,000 to 119,999DWT

v. Capsize vessels are a kind of Dry Bulk Carrier, which are 100,000DWT and above