



- Capacity of Five Trade Lanes of the P3 Alliance
- World Economic Outlook
- Expert Interview: Experts of the Shipping Industry Sharing Their Thoughts on the Development of China (Shanghai) Pilot Free Trade Zone
- Special Report on Critical Issues of Sea-Air Transport Security
- Maritime Education and Sustainability

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INDUSTRIAL HIGHLIGHTS

CAPACITY OF FIVE TRADE LANES OF THE P3 ALLIANCE

With the recent formation of the P3 alliance between Maersk, CMA CGM and MSC, the overall carrying capacity will remain largely unchanged as compared with the capacity currently deployed as shown in shown in Table 1. The P3 will operate a fleet of 255 ships with total capacity of 2.6 million TEUs on 28 service loops. The advantage of economies of scale availed by the P3 alliance is expected to result in a much lower unit cost for operations. This is expected to further strengthen their competitiveness and provide better products to their customers.

Table 1. Capacity of five trade lanes of the P3 alliance as of 2013

Trade lanes	Capacity in June		Latest proposed capacity	
	number of services	average weekly nominal capacity (TEU)	number of services	average weekly nominal capacity (TEU)
Asia-Europe	9	104,000	8	104,000
Asia-Mediterranean	6	63,000	5	63,000
Asia-US west coast	6	53,000	5	53,000
Transpacific-US east coast	4	25,000	4	25,000
Transatlantic	4	35,000	5	40,000

Data consolidated by C.Y. Tung International Centre for Maritime Studies (2013)

SeaIntel Maritime Analysis has predicted that the P3 will have an average vessel size 12% larger than G6 and 27% larger than CKYH alliances respectively. By the end of 2015, the P3 will have an average vessel size 24% larger than G6 and 26% larger than CKYH alliances. (SeaIntel Maritime Analysis)

BIGGER SHIPS AND BIGGER CHALLENGES?

In September 2013 the first Triple-E class vessel named Maersk Mc-Kinney Moller was deployed for the first time on the Asia-Europe trade route with the capacity of 18,270 TEU. This is the largest container carrier at present. Such large vessels enjoy some additional scale advantages and are also more environmental friendly. However there are also some disadvantages and drawbacks, some of which are listed below.

Cargo: It is doubtful whether the ships would be able to find sufficient cargo to fill their ships on the return trip from Europe to Asia or it will have to offer substantial discounts to attract more shippers. The possibility of outbound cargo subsidizing inbound cargo cannot be ruled out.

Freight rate: The step change in ship size is bound to increase fluctuation in container freight rate. This will eventually lead to lower rates in the long run.

INDUSTRIAL HIGHLIGHTS

Ports: The bigger ships will present the current ports with handling challenges by way of draft, equipment and connectivity.

Manpower: The focus on larger and more automated vessels will also mean recruiting new and more competent officers who are specially trained to handle such vessels. It will also require upgrading of curriculums at maritime educational and training institutions.

Fuel efficiency: Stephen Schueler, the Chief Commercial Officer of Maersk Line, said that 2.1 million tons of CO₂ are reported to have been saved last year by Maersk's customers. The P3 alliance is expected to further drive green gas reduction due to improved fuel efficiency. (Presentations on the TPM Asia Conference 2013 in Shenzhen, China)

Customers Satisfaction: With a joint vessel operation centre having been established in London, the P3 Network aims to improve and optimize operations and deliver better service offerings to its customers by providing customers with more stable, frequent and flexible services. This is possibly due to the increase in sailing frequency by the P3's combined network. (Lloyd's List, 6 September 2013)

IMF WORLD ECONOMIC OUTLOOK

According to the World Economic Outlook (WEO) released by the International Monetary Fund in October 2013, global economy would be facing a slower economic growth and stringent global financial conditions. WEO has also predicted about the advanced economies such as China, the United States, Japan and the EU. Specifically, China and a growing number of emerging market economies are projected to grow at a slower pace compared to previous years. Despite this, their pace of growth will continue to remain much above that of other advanced economies. Public sector demand in US is expected to diminish in 2014 even though it has enjoyed robust economic growth in the past quarter. Despite expansion of public balance sheet in Japan, its economy is projected to slow due to tax increases. As for the EU, it is yet to step out of recession, as such its economy remains weak. Growth dynamics among these economies are projected to further diverge in 2014. (IMF World Economic Outlook, October 2013)

A CONSULTATIVE COMMITTEE ON ECONOMIC AND TRADE CO-OPERATION BETWEEN HONG KONG AND THE MAINLAND

As a response to the development of the China (Shanghai) Pilot Free Trade Zone, the Hong Kong Government has announced the establishment of a Consultative Committee on Economic and Trade Co-operation between Hong Kong and the Mainland in October 2013. The Committee is intended to advise the HKSAR Government on matters related to strengthening co-operation with the Mainland in trade, economic and other relevant areas. (www.info.gov.hk)

Definitions of free trade zone

Lu and Yang (2006) mentioned that from an evaluation of the information on Web sites provided by major international logistics zones, an “international free trade zone” is defined as a zone that integrates the operations of manufacturing with land, sea, air transportations in order to achieve the efficient distribution of commodities. From the perspective of logistics, an international zone is defined as to provide several value-added activities in an integrated logistics system. According to Lu and Yang (2006), an international logistics zone has the functions of a free trade zone and free port which is a specific area where trade is unrestricted exchanged. The definition on Wikipedia of free trade zone is also called foreign-trade zone, formerly free port, an area within which goods may be landed, handled, manufactured or reconfigured, and re-exported without the intervention of the customs authorities. Only when the goods are moved to consumers within the country in which the zone is located do they become subject to the prevailing customs duties. Free-trade zones are organized around major seaports, international airports, and national frontiers—areas with many geographic advantages for trade, such as Hong Kong, Singapore, Colon, Copenhagen, Stockholm, Los Angeles and New York City. Alternative methods devices such as bonded warehouse and associated systems are used in some large seaports such as London and Amsterdam (Wikipedia 2013).

The China (Shanghai) Pilot Free Trade Zone shall create a free trade zone, as measured by international standards, with convenient investment and trading procedures, full convertibility of currencies, effective and efficient goods supervision, and an investor-friendly regulatory environment, as declared by the *Framework Plan for the China (Shanghai) Pilot Free Trade Zone*.

Notes taken at a forum about the China (Shanghai) Pilot Free Trade Zone

Two editors of the Maritime Insight attended a forum held at the Exhibition Centre in Hong Kong on Nov 8, 2013. Below are some notes taken at the forum.

Dr Ma Jun, Chief Economist for China at Deutsche Bank mentioned that the significance of the FTZ was on promoting private economic development and exploring financial reforms. In a report released by Ma's team, two major points were made. Firstly, via the FTZ's "negative list", companies, regardless of whether they are private or foreign enterprises, will compete on equal terms. Secondly, by opening private banks, an "offshore market" is established to promote financial reform. Ma suggests that the Chinese government will shorten the "negative list" for domestic private enterprises in the future, there by developing market potential in the long term. Ma has predicted at the forum that the FTZ's “negative list” will be shorted by 80% to 90% in three to five years. The negative list serves as a blacklist for foreign investors in the FTZ and provides more chances for foreign investors to invest in any sector that is not in the list. Ma believes that this will provide financial services to Chinese small and medium-sized enterprises.

During a recent interview, Prof. Petrus Choy, an acknowledged global expert of shipping finance, expressed his views about the challenges that Hong Kong is likely to face with due to the recently established China (Shanghai) Pilot Free Trade Zone (“FTZ”).

According to Prof. Choy, there is no doubt that FTZ will possibly threaten the existing position of Hong Kong in terms of its being the international and regional financial and maritime centres over a shorter timeframe than expected. To review the new situations after the set up of FTZ, Prof. Choy stated that the basic factors that need to be determined as to whether Hong Kong can maintain its status and/or Shanghai can become a new international centre of whatever kind are critically dependent on the following major considerations.



Prof. Petrus Choy

Professor of Practice (Shipping Finance),
Department of Logistics and Maritime
Studies, The Hong Kong Polytechnic
University

The Fundamentals and Challenges

Customer-driven international centre

Potential and existing customers (or business enterprises) are always the primary and key driving forces in

establishing, maintaining and strengthening the predominant position of a place to be an international centre – which means whether the place provides continuous and potential competitive advantages to business enterprises to do business, earn superior profits and have an excellent business performance. Obviously, it appears that Shanghai may have a comparatively better position than Hong Kong in keeping existing and attracting potential business enterprises to set up their businesses there since Shanghai is potentially providing much better opportunities with rapid development and growth in the past decades. In addition, it is widely claimed that business enterprises, in particular foreign enterprises, are expected to take advantage of the platform that FTZ will provide as the most important business gateway to enter into a bigger market in the hinterland of China. It is also said that Shanghai has started its pilot reform for the liberalization of commerce for more than 20 years and foreign enterprises have ventured into the city by setting up their corporate or regional headquarters there one-after-another. It is believed that this is clear evidence that Shanghai is an ideal place for foreign enterprises to operate their businesses there in the long run.

Adaptive and innovation international centre with long-term strategic planning capabilities

If a place possesses the adaptive and innovative strengths in continuously safeguarding its core advantages and global competitiveness on the one hand, and also introducing stable, new, and long

term strategic polices with strong governmental support on the other, there is no doubt that such place can clearly be in a better position to be promoted as an international centre. In this regard, China has set a clear mission to enhance Shanghai's global competitiveness to be an international financial centre by 2020 with wider central and provincial governmental supports. The FTZ is said to act as role model for sets of new reform moves which will be replicated to other major parts of China. Unfortunately, Hong Kong is not proactive enough in this connection since it is arguable that Hong Kong is not acting as an "initiator" for its own long-term strategic planning but somehow a "facilitator" with its core roles to be integrated with the central policies and strategies of China as a whole.

Centre is a system and network with potential synergy and further growth

A centre is not the place alone, but a system and network with synergetic and positive effects with its subsystems. It has stronger potential economic growth and the provision of wider ranges of services/activities.

It is noted that the Yangtze River Delta (Shanghai is heading the Yangtze River Delta Economic Coordination Association with the total of 22 cities) has achieved a greater economic growth than the Pearl River Delta (Hong Kong is one of the 10 cities in the Pearl River Delta Economic Zone) in the past decades, which means the synergetic and positive effects in the case of Shanghai is obviously

stronger and potentially higher than Hong Kong. Like the case of the world's busiest container ports, Shanghai has been ahead of Shenzhen and Guangzhou for over a decade and has also overtaken the leading positions of Hong Kong and Singapore since 2007 and 2010 respectively.

Currently, there are two more maritime centres under the Shanghai municipal manipulation, namely the North Bund Maritime Centre and Pudong International Maritime Centre. If these two maritime centres can be merged with FTZ or their respective services can further be consolidated, the potential integrated zone will definitely provide a much bigger synergetic effects offering a wider range of professional maritime services to shipping participants.



Photograph by Fang Zhang (2013)

“A centre is not the place alone, but a system and network with synergetic and positive effects within its subsystems with stronger potential economic growth and the provision of wider range of services/activities.”

Having said the above, Prof. Choy went on to predict that the potential and core competitiveness and advantages of Shanghai will likely be overwhelming – which means the status of Hong Kong as an international financial and maritime centres will definitely be weakened over a period of time – in the worst case scenario, Shanghai may possibly take a shorter period of time to overtake Hong Kong than expected.

The Ways Forward

Nevertheless and for the time being, Prof. Choy remains optimistic about Hong Kong being the international financial and maritime centre on the one hand and as one of the prime locations of global logistics on the other.

Comparative and preferential advantages of Hong Kong

Prof. Choy remarked that Hong Kong is still maintaining its core and comparative advantages. The competitiveness of doing businesses in Hong Kong as compared with Shanghai is set out in the following table.

Indicators of Shanghai’s potentials	Hong Kong’s key drivers for the success
<ul style="list-style-type: none"> • huge business gateway to hinterland China • large scale of market and market size • continuous and strong economic growth • central and provincial governmental supports • favorable and centralized policies and leadership • relative low operating costs • commitment and strategic moves to reform • sufficient supply of land and labor with relatively lower cost 	<ul style="list-style-type: none"> • policy of low and simple taxation • minimal cultural and lingual barriers • no exchange control • effective and transparent regulations • no restrictions on capital flows into and out of Hong Kong • no barriers of access to the market by foreign business • international standards of judicial systems and regulatory environment • strategic location (NYLONKONG) • efficient and quality service-oriented manpower • world-class communication system and infrastructure • stable and guarantee of foreign investment policies • top rank of global competitiveness and numerous high international rankings

In addition to the above, there is no doubt that Hong Kong still possesses some other key preferential advantages, for example a far more mature and transparent legal and financial system; operational efficiency and effectiveness; international platform for accessing major sources of capital and finance; customer-oriented service quality; pool of talents and professionals; integrated network of

institutions and markets; wide range of professional and international standard services; world-class educational and training system; free access to global information. All these factors attract business enterprises to continue to operate in Hong Kong as compared with Shanghai, especially as it is rather difficult for Shanghai to imitate these advantages over a short period of time. Therefore, though it is only a matter of time that Shanghai will take a more leading position, Hong Kong can still maintain part of its roles as international financial and maritime centres to continuously attract Chinese and foreign enterprises over a longer period of time if Hong Kong is able to maintain and safeguard these preferential advantages.

Along with and with the above preferential advantages that cannot be fully incorporated by Shanghai for the time being, there are arguments that Prof. Choy agrees: (i) Shanghai and Hong Kong can be mutually collaborate in a complementary manner for the common good through the global trend of specialization and division of businesses in financial and maritime industries, through which Shanghai can become the main engine while Hong Kong can be promoted as the secondary one – like an integrator in the overall strategic move of ZTC; or (ii) alternatively, like the co-existence of both the Yangtze River Delta Economic Coordination Association and Pearl River Delta Economic Zone, it is possible for China to have two international financial and maritime centres whereby Shanghai can take the lead to form the primary roles in the north and Hong Kong can be integrated and worked with Guangzhou and Shenzhen to form another in the south.

Proactivity and creativity is the future of Hong Kong

Prof. Choy thinks that Hong Kong government has traditionally played a passive role in the economy, or what we call it “the philosophy of positive non-interventionism”, with little by way of any industrial policy and/or intervention in the market.

In addition, it is noted that Hong Kong is not proactive enough to develop its long-term strategic policies for industry, a result of which is that various industries are claiming a serious lack of a clear and directional approach with too much reliance on China to assist the future growth of the Hong Kong economy – not to say any specific assistances from the Hong Kong government. In addition, unlike other major competitors of Hong Kong like Singapore, Hong Kong government is not innovative enough to introduce “creative” and effective policies to improve the competitiveness and advantages of Hong Kong. As a result of this, Hong Kong is gradually losing numerous top-rankings and its leading positions in terms of global competitiveness.

Thus, it is the time for Hong Kong to rethink about the future and its practical path in a longer term with strategic solutions. It is believed that Hong Kong should follow the lead of Singapore and the Republic of Korea, both of which have noticeably adopted a very aggressive and creative approach recently, which allows them to achieve significant improvements in their global rankings with

exceptional economic growth. If Hong Kong fails to revamp itself with stronger sense of adaptive capabilities and rebuild its competitiveness with main focuses on its core competencies and advantages proactively and creatively, it will not only lose its market share and competitiveness to FTZ but also to its major competitors in the region.

In short, Prof. Choy concluded that Hong Kong's challenges are not merely due to the rise of Shanghai's FTZ or even the Mainland's impending financial reforms - it is in fact Hong Kong which may have already allowed its key drivers and core preferential advantages to gradually disappear one-by-one. Prof. Choy took the following examples to demonstrate how Hong Kong is able to maintain its core preferential advantages and competitiveness.

- Operating costs and efficiency are said to be the most significant factors attributable to the continuous success and superior performance of business enterprises. Despite Hong Kong being regarded as one of the most expensive ports in terms of its input costs of container terminal handling charges, the overall output costs (including the factor of efficiency) are still regarded as competitive when comparing with its competitors.
- In addition, Hong Kong port is recommended to follow the global trend of modernization and mechanization, which can maintain both the efficiency and relatively lower output costs to serve the best interests of the industrial players in maritime and logistics industries globally and locally. Furthermore, with the higher level of efficiency and lower output costs, Hong Kong, being one of the world's busiest transshipment ports, can still maintain its top ranking in port operations with transshipment of at least 60 – 80% and most importantly safeguard one of its four key pillars of the trading and logistics sector, which generate over 20% of the Hong Kong's GDP and employment respectively.
- As has been discussed in previous parts, a solid rule of law with a reliable judicial system and free access to international financing in Hong Kong, all create peerless conditions specifically for maritime arbitration and finance for shipping and logistics. This should be promoted and strengthened by Hong Kong – as said above, the advantages cannot be easily replicated by Shanghai and/or any other major cities in China in a short timeframe due to a completely different political, legal and financial systems and culture.

Actually, the implementation of China's financial and maritime reforms, the establishment of FTZ and the clear mission of striving Shanghai becoming the international financial centre, may not necessarily impose serious threats to Hong Kong provided that Hong Kong takes full advantages of all its strengths and new developments to create new opportunities for itself. In addition, if Hong Kong is able to introduce new policies and strategies in line with China's new stage of growth, Hong Kong and Shanghai can possibly and positively collaborate to achieve all the possible, synergetic and mutual benefits hand-in-hand – "collaboration is always better than competition for a win-win solution."

Several years ago, in 2006, Prof. Lu and his PhD student Ching-Chiao Yang had already conducted research on *Comparison of investment preferences for international logistics zones in Kaohsiung, Hong Kong, and Shanghai Ports from a Taiwanese Manufacturer's perspective*. The Maritime Insight of December Issue is honored to have Prof. Chin-Shan Lu, an expert in the shipping and logistics industry, share with us his earlier research about investment preferences for the international logistics zones in Kaohsiung, Hong Kong, and Shanghai and his thoughts on the development of the FTZ.

To begin with, concepts associated with international logistics zone have been clarified in Lu and Yang (2006)'s research. Lu and Yang (2006) mentioned that an international logistics zone has the unrestricted international exchange of goods, with customs tariffs used only as a source of revenue and not as an impediment to trade development. Furthermore, based on the literature review of criteria considered important to manufacturers when making decisions on FDI in international logistics zones, Lu and Yang (2006) selected twenty-nine items to be included in the questionnaire. These items, however, could still be used today to measure the strengths and weaknesses of Kaohsiung, Hong Kong and Shanghai, which would also shed light on the future development of the FTZ, Hong Kong and Kaohsiung. Since large manufacturing firms are major investors in international logistics zones, Lu and Yang (2006) chose samples from the top 500 Taiwanese manufacturing firms to conduct the survey. Characteristics of responding firms were categorized in terms of age of firm, number of employees, revenue, type of industry and FDI experience.



Prof. Chin-Shan Lu

Director of C.Y. Tung International Centre for Maritime Studies, Professor at Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University

According to Lu and Yang (2006), the five criteria respondents considered most important when investing in international logistics zones were (1) political stability, (2) corporate tax incentives, (3) government administration efficiency, (4) labor cost, and (5) energy cost. It is therefore not surprising that Shanghai had been demonstrated in the research to have a greater advantage to develop its logistics zone than Kaohsiung and Hong Kong, primarily due to cost and market-related reasons, rather than infrastructure and financial-related reasons. Respondents in their survey had rated Shanghai as having a very strong competitive edge in terms of economic growth, market size, labor cost, cost of land acquired, and energy cost. Hence, in the respondents' point of view, Shanghai was the most preferred logistics zone in which to invest. Results had also revealed that Shanghai and Hong Kong have low cost and differentiation advantages, respectively (Lu and Yang 2006). Hence, Kaohsiung therefore needs to develop its own core competencies and competitiveness to differentiate itself from Shanghai and Hong Kong as an international logistics zone. Table 2 summarized the relatively competitive items for foreign investment on each port (Lu and Yang 2006).

In a recent interview with Prof. Lu, he also mentioned that there are some aspects that Shanghai needs to enhance before it is fully capable of utilizing the China (Shanghai) Pilot Free Trade Zone.

POLICY INITIATIVES

INTERVIEW WITH PROF. CHIN-SHAN LU

Except for its competitive advantages listed in Table 2, there are also other areas which Shanghai can improve, such as the labor quality and skill, efficiency of government administration, openness of financial policy as well as the employees' working attitudes. Furthermore, cultural differences means Shanghai faces some challenges to develop itself into an international centre for both maritime and financial sectors.

Table 2. Mean scores of Kaohsiung, Shanghai and Hong Kong on the competitive items for foreign investment

Investment Criteria	Kaohsiung	Shanghai	Hong Kong
Transport linkage	4.048	3.730	3.429
Geographical location	4.032	3.952	3.952
Inter-modal service	4.000	3.841	4.079
Labor quality and skilled labor force	3.841	3.460	3.921
Communication facility	3.794	3.460	4.064
Information system	3.778	3.460	4.048
Simplified customs procedures	3.762	3.191	3.968
Efficiency of port operations	3.683	3.222	3.841
Frequency of sailings and flights	3.683	3.730	4.048
Reliability of energy supply	3.603	3.429	3.683
Relaxation on foreign exchange	3.540	2.698	3.873
Relevant firm's support	3.524	3.635	2.899
Guarantee of foreign investment policy	3.476	3.000	3.667
Per capita income	3.429	3.079	3.762
Availability of local capital	3.381	3.127	3.492
Political stability	3.333	3.254	3.587
Proximity to raw material source	3.333	3.619	2.841
Agglomeration effect	3.302	3.524	2.841
Local regulatory environment	3.238	2.825	3.524
Security	3.191	3.095	3.349
Government administration efficiency	3.159	3.222	3.635
Corporate tax incentives	3.159	3.635	2.889
Port charge	3.032	3.254	2.889
Openness of foreign labor policy	2.984	2.444	3.238
Market size	2.952	4.016	2.968
Economic growth	2.889	3.968	3.032
Energy cost	2.841	3.603	2.651
Cost of land acquired	2.651	3.635	2.222
Labor cost	2.524	3.683	2.302

Note: mean: 1= very poor; 5=very good

Adapted from: Lu and Yang (2006)

POLICY INITIATIVES

INTERVIEW WITH PROF. CHIN-SHAN LU

The manner of developing Shanghai into an international logistics zone is very similar with the way the free port zone policy was launched in Taiwan several years ago. However, Taiwan eventually failed in the end to transfer to a free port zone due to lacking support from various parties and the deficient rule of law that carried out by the government. Prof. Lu went on to mention that if the government of the Free Port Zone pays part of the initial cost of factory setup, and promises not to ask for payment of taxes for the next few years, it might be turn out that when the taxation-free years are over, the organization which has set up their branches in the Free Port Zone are likely to move those branches elsewhere to save expenses. Otherwise, these firms will bargain with further demands in order to continue operating in the free trade zone. Hence, securing the sustainable development of those registered firms in FTZ is probably a critical concern for the policy makers in the years to come.

In Prof. Lu's point of view, the rule of law which will be executed in FTZ is fundamental to ensure and guarantee the successful operations of the free trade zone, and it is of great significance if the rule of law shall follow international standards.

According to the official website of overall objectives stated in the Framework Plan for the China (Shanghai) Pilot Free Trade Zone, during the course of two to three years of piloting reforms, the FTZ shall (1) expand the opening up of service sectors and promote the reform of the foreign investment administrative system, and (2) develop a headquarter's economy and new trade forms and explore the improvement of Customs' supervision efficiency; (3) shall explore opening up of financial services; and (4) shall create a framework to support investment and innovation activities to cultivate an internationalized business environment. Since China has already set the clear objectives at the initial stages, in Prof. Lu's point of view, the rule of law which will be executed in FTZ is fundamental to ensure and guarantee the successful operations of the free trade zone, and it is of great significance if the rule of law shall follow international standards. It is said that the Shanghai government is working on the independent rule of law and is about to release it next year. The successful and sustainable development of the FTZ does lie largely on the clear mission and vision, and the effective rule of law as well.



Photograph by Ning Wu (2013)

We are delighted to have logistics and maritime expert, Prof. Hong Yan, Professor at the Department of Logistics and Maritime Studies at The Hong Kong Polytechnic University, to share with us his thoughts on the development of an international maritime centre of Hong Kong and the development of the China (Shanghai) Pilot Free Trade Zone (FTZ).

“Having appropriate laws is insufficient unless they are properly implemented, both in letter and spirit.”

With the rapid development of the economy over the past three decades, commercial enterprises in China including the banking sector have grown bigger than they have ever been before. As such, one needs to reflect upon what could be done by the government to prevent the formation of monopolies and oligopolies which could exploit the consumers. It should also be understood that preventing the formation of monopolies is not sufficient in itself for the efficient functioning of a market economy. Having appropriate laws is insufficient unless they are properly implemented, both in letter and spirit. The Chinese government wishes to experiment with market reforms, and the China (Shanghai) Pilot Free Trade Zone (FTZ) is a small portion of that experiment.



Prof. Hong Yan

Director of the Laboratory of Container Security (LCS), Professor at Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University

“Hong Kong and Shanghai can cooperate with each other by way of better maritime training and education.”

Talking of the opportunities and threats that the FTZ brings to Hong Kong, Prof. Yan thinks that there is not much for Hong Kong to worry about. Hong Kong's competitive advantages lie both in infrastructure and “software” particularly the culture. Admittedly, it is only a matter of time before Shanghai overtakes Hong Kong in terms of infrastructure. However, the concept of service, the freedom of speech and legal systems, for example, are hard for Shanghai to catch up with in the short term. Shanghai has a long way to go to become a world class financial and maritime centre. What really impedes Shanghai from being such a centre is the absence of such “software”, since it is a part of a particular mindset, which is the most difficult part to change. Nevertheless, there are many aspects about Hong Kong and Shanghai could lead them to work together and learn from each other. Both sides can cooperate with each other by way of better maritime training and education. Hong Kong and Shanghai both have a long history in training and developing a maritime talent pool, and Shanghai could provide the sources of students for universities of both sides. Additionally, companies in Shanghai may have their ships registered in Hong Kong, instead of having their ships registered in some other parts of the world. Conversely, operational efficiency, service quality and the air freight service of Hong Kong, have a great deal for Shanghai to learn from and to then improve its own services.

Prof. Yan has also mentioned that governments of both sides have played a passive role particularly in the maritime industry. On the one hand,

the Hong Kong government acts as the facilitator instead of the planner, and it rarely, unless absolutely necessary, interferes in its market.

On the other hand, Hong Kong government could have had more favorable policies in the maritime field, such as increasing program intake quotas, offering more scholarships and research grants, and creating conditions for talents from other places coming to Hong Kong and etc. Singapore is a good case in point. It interferes in its market as well as the educational institutions by providing favorable policies for students as well as immigration incentives for foreign professionals in the maritime sector. These sorts of actions can ensure the growth of a superior talent pool, which in turn might lead to industry clusters as well.

Last but not the least, government should envision a smarter and more strategic infrastructure plan in favor of the logistics and maritime industry. Port connectivity and logistics efficiency will continue to play their vital part in Hong Kong when competing with others. Singapore serves as an example once again. In its infrastructure plan (Figure 2), the high-speed railway in Singapore is connected with terminals. But looking at Hong Kong's plan (Figure 3), it can be seen that it had already missed a chance to connect Hong Kong-Zhuhai-Macao Bridge with its railways. It might once again miss the chance to connect its high-speed railway with the ports, the airports and the terminals.

Figure 2. Singapore high speed rail link expected



Figure 3. Hong Kong high speed rail link expected



POLICY INITIATIVES

INTERVIEW WITH MR MICHAEL LEE

The December Issue of Maritime Insight is pleased to present the views of Mr Michael Lee, the ex General Manager of Maersk (Shanghai) Shipping Company, on the significance of the China (Shanghai) Pilot Free Trade Zone. Michael Lee has about 20 years' experience in the shipping industry.

The China (Shanghai) Pilot Free Trade Zone (“FTZ”) was officially launched on 29 September, 2013. This would be another milestone after the establishment of Shenzhen Special Economic Zone which was the first special economic zone in the People’s Republic of China. The timing of the establishment of the China (Shanghai) Pilot Free Trade Zone is exactly in accordance with the Third Plenary Session of the 18th Communist Party of China Central Committee, and so the political significance of the FTZ would weight more than its economic effect. To put it another way, the implementation of FTZ signals the Chinese government’s determination to further implement economic reforms and the opening up of domestic markets to foreign goods. There are two primary reasons that have given birth to the FTZ.



Mr Michael Lee

Ex General Manager at Maersk (Shanghai) Shipping Company

“The political significance of the FTZ would weight more than its economic effect.”

Bottlenecks to foreign trade

Due to the continuously slowing down of global economic growth, foreign trade in China particularly its exports, have been adversely affected. Meanwhile, the increasing value of the Chinese currency and the cost of labor has also lead to the diminishing competitiveness of its goods, for example, at the 114th China Import and Export Fair (Canton Fair), the total export transaction amounted to just 194.61 billion RMB (or 31.69 billion US dollars), a decrease of 10.9% as compared to the 113th session. 189, 646 overseas buyers from 212 countries and regions around the world attended the 114th Canton Fair, a 6.5% decrease from the previous session.

Future challenges and barriers to trade agreement

As the world continues to globalize even further China has become the world’s largest exporter, yet it assumes a passive position in the global foreign exchange market. The internationalization of the RMB is still a goal that China endeavors to reach. As the finance and insurance sectors in China are strictly regulated, the exchange-rate is totally controlled by the government and insulated from market forces. However, under the new international trade framework, China is being put under greater pressure to implement financial reform and open up the domestic markets. Furthermore, China may possibly face market entry barriers as a result of the formation of The Trans-Pacific Partnership (TPP), The Transatlantic Trade and Investment Partnership (TTIP), the Plurilateral Services Agreement (PSA) and Regional Comprehensive Economic Partnership (RCEP). TPP is a trade agreement led by the US which covers 12 countries which together account for 50% of the global economy. The framework of TPP has already been formalized and it would become the

world's largest free trade zone by working with the European Union (Table 3). Hence it would become mandatory, for China to join TPP. However, in order to better facilitate negotiations in joining such an agreement, China needs a testing ground in areas of finance, telecommunications, culture, services and so on. As the experiments proceed, government administrations, industrial revolutions, and supporting rules of law need to be adjusted and ratified so that to the impact on domestic industry could be minimized. FTZ is also significant as a pilot project, which would lay a foundation for assessing the impact of economic reforms and providing a replicable model for further national reforms.

Table 3. Member countries of TPP, countries in negotiation process and countries interested in joining

Country/Region	Status	Date
Brunei	Original Signatory	Jun-05
Chile	Original Signatory	Jun-05
New Zealand	Original Signatory	Jun-05
Singapore	Original Signatory	Jun-05
United States	Negotiating	Feb-08
Australia	Negotiating	Nov-08
Peru	Negotiating	Nov-08
Vietnam	Negotiating	Nov-08
Malaysia	Negotiating	Oct-10
Mexico	Negotiating	Oct-12
Canada	Negotiating	Oct-12
Japan	Negotiating	Mar-13
Taiwan	Announced Interest	Sep-13
South Korea	Announced Interest	Nov-13

Country/Region	Status
Philippines	Express to Join
Laos	Express to Join
Colombia	Express to Join
Costa Rica	Express to Join
Indonesia	Express to Join
Bangladesh	Express to Join
India	Express to Join
Thailand	Express to Join

Consolidated by C.Y. Tung International Centre
for Maritime Studies (2013)

Further expanding market freedom boundaries to full access

FTZ shall abolish the Foreign Investment Catalogue and replace with a “negative list”. Foreign investment in the region will no longer be discriminated from the domestic investment. Except for those industries that are listed on the “negative list”, the rest are all open to investment which includes financial services, shipping services, commercial and trade services, professional services, social services and cultural services.

“There are five missions of the FTZ which are in accordance with missions of TPP.”

Eliminating trade barriers

Simplifying the procedures is important when doing global businesses. This will increase the efficiencies of regional manufacturing and shorten supply chains. In this regard, member countries competences might be retained even in an intense competitive environment. It is expected that zero tariff and customs inspections are to be executed under which situation goods are able to be freely imported and exported.

Financial liberalization by complying with international standards

One of the main objectives of FTZ is to promote the internationalization of the RMB. Lowering of barriers to the movement of foreign currency within the FTZ will help promote cross-border RMB settlement businesses and could indicate the possible impact that internationalization of the RMB might have on the global currency market.

Simplifying the administration system

The mission of TPP is to support member countries in many aspects. Hence it is of greater importance for the FTZ to simplify the administration systems in order to encourage small and medium enterprises (SMEs) which need to be involved in businesses such as international trade, financing, shipping, insurance and telecommunications etc. The significance of this action is threefold. Firstly, SMEs will benefit a lot from the simplification of administrations and thus decrease the operational cost. Secondly, the region will benefit greatly especially in terms of employment rate, trade facilitation, supply chain simplification and more investment. Lastly, an integrated transparent supervision mode is supposed to be built.

Accumulating scalable and replicable experiences

From Mike Lee's perspective the functions of the FTZ, which is just 28 square kilometers in area, are quite limited. The significance lies in it being precursor to future reforms, in some other cities including Tianjin, Dalian, Qingdao, Xiamen, Ningbo and Qianhai which are also planning to set up similar free trade zones.

“It is necessary to accumulate experiences in the FTZ which will then be scalable and replicable in other cities at a later stage. Thus this is also the primary rationale of the zone to act as an area to spearhead reforms that will gradually be applied to the whole country.”

Specific regulations and guidelines to be applied in the FTZ are still unclear. Multiple parties hold different opinions towards the fully opening up and implementation of the FTZ, and it will take a long time for all parties involved to reach an agreement with the help and pressure from the central government. A long history of bureaucratic management and administration bring a lot of uncertainties to successful operations of the FTZ. Only after FTZ establishes the scalable and replicable mode, can similar free trade zones be set up in other cities and then to the whole country. All in all, based on what Mr Lee has stated, the China (Shanghai) Pilot Free Trade Zone shoulders some of the government's responsibilities.



Critical Issues of Sea-Air Transport Security

Special Report of Laboratory of Container Security

Girish Gujar, Hong Yan and Mukul Jain

Introduction

Aviation security procedures have to conform to certain agreed international norms since the Chicago Convention 1944. The horrendous events of 9/11 where terrorists leveraged security lapses to cause unprecedented devastation, and due to the rise of incidents of terrorism all over the world, aviation security has become a very critical issue for policy makers, security and investigation agencies, and scholars across the world. Despite the implementation of a fairly large number of measures, no country is anywhere near to guaranteeing ‘zero failures in security’ as the aviation sector has no room for failure. This has significant implications for costs and revenue models of all stakeholders, may it be passengers, airlines or airports. Prima facie such measures appear to be more reactive rather than proactive in nature.

In such circumstances everybody today seems to be waiting with bated breath for the next event to occur somewhere in the world. The policy makers and governments all over display an air of abject resignation and appear to have already surrendered to a few disgruntled elements of the society, occasionally termed as terrorists, by the remaining constituents of the same society. Any major security lapse results in security agencies demanding more and stringent measure. In a display of kneejerk reaction, governments announce new measures that are seldom implemented due to the opposition by stake holders as invariably the enhanced security measures demand huge expenditure and impede the smooth flow of passengers and freight. Soon the lessons of that incident too are forgotten and life goes on.

It should be highlighted here that intermodal transport today also signifies the frequent use of air transport in conjunction with that of marine and land modes. Our research also reveals that usage of air transport is on the rise in a consistent manner.

Ever since “9/11”, huge investments have been made in order to increase airport security, by both the public and private sectors. These expenses are eventually passed on to the passengers as increased spending in security either puts the profit margin of the airports under pressure or increases the cost of air traffic. Moreover the impact goes beyond the increase in direct expenses: additional security measures have also led to increased time at the airport, spent at security checks rather than on more

productive activities. Thus, paradoxically the very effort to ensure that air traffic can continue unhindered and unthreatened, is putting a strain on it. This scheme of things obviously needs to be altered as Bailey (2002) has stated whereby the governments all over need to assume a far more proactive role. However, whether they wish to do so, or are even competent enough to intervene in economic decision-making process of air transportation systems, is another issue altogether.

Air traffic everywhere, particularly in the emerging economies, is set to grow exponentially. According to recent forecasts released by Airports Council International (ACI), over the next 15 years, global air passenger traffic will grow by over 4% per annum. This means that by 2020 something like 7 billion people will be using the world's airports, and, with freight traffic growing at an even greater rate of around 5.1% per annum, reaching some 170 million tons in 2020, it is clear that greater airport capacity is a precondition for achieving the forecast growth.

Most planners seem to have overlooked the consequences of such increase for aviation security. This is what we wish to address in this paper.

Failures in Aviation Security

A 'Security Failure' in aviation sector may be defined as a failure to protect the passengers, staff, aircrafts and assets at the airport that facilitate air transport, from real or potential damage, destruction, hurt, accidental/malicious harm, crime and other threats. Any failure to consider, defend against or mitigate any attack or risk incident might be considered a security failure, irrespective of the quantum of consequential loss. The goal of aviation security is to prevent harm to aircraft, passengers, and crew, as well as support national security and counter-terrorism policy.

According to IATA (2012) the concept of air transport security can broadly be divided under three heads, viz. technological, procedural and personnel. The security measures hence need to have a balanced combination of all these three aspects. Before commenting upon this critical issue, it must be remembered that it is equally important to ascertain whether the existing measures are commensurate with desired security standards by the policy makers and if not why not?

A security failure 'incident' may or may not result in a security failure 'event'. An event is any incident that results in damage, fatal or otherwise, to the aircraft, passengers or ground facilities whereas an incident only highlights the potential of such damage which did not occur due to prevention measures adopted by the authorities or due to fortuitous circumstances. It should also be realized that the number of security incidents is much higher than that of events. Due to the sensitive nature of the subject, it is suspected that a number of incidents are not reported and such details are not easily accessible in the public domain. However, suppressing any event is nearly impossible in most parts of the world. The security events may be classified under different categories depending upon the severity of damage caused or other similar characteristics. Now days the damage caused to intangible assets such as databases and communication systems can result in as severe consequences as the damage caused to tangible assets such as aircrafts or ground facilities. The frequency of incidents and events is likely to increase in line with the increase in air traffic, unless there is a drastic improvement in the security management. However, the severity of damage would remain unpredictable due to the poor comprehension of the subject matter at hand.

During our research we noticed that occasionally there was a tendency to obfuscate safety with security. These two phenomena can broadly be differentiated by 'safety' being tagged with unintentional acts while 'security' being connected with intentional acts done with an intention to harm and disrupt the air transportation system.

Systemic Policy Response

The response of the authorities tasked with preventing the occurrence of security events or incidents is expected to be systemic in nature by way of policy changes. However, this does not always happen nor are such policy changes universal due to a variety of reasons; chief amongst them being inadequate sensitivity, lack of comprehension, insufficient analysis, conflicting interests of stake holders, absence of coordination and lastly paucity of funds. It should also be recognized that the perpetrator of damage needs to be lucky only once whereas the authorities in question have to be lucky at all times; as such no guarantees can be accorded with regards to reoccurrences of such events.

In order to prevent security failure events, the authorities usually rely upon creating multi-level barriers, like an onion. Normally such levels comprise of checking passenger manifests, flagging of high risk passengers or cargoes, appointment of air marshals etc. Such combinations of security measures are expected to deter if not prevent a security event. The Transport Security Administration (TSA) of the United States has adopted an approach of not heaping one layer upon another but leaving it to the risk perception of local or regional authorities. As such greater autonomy for specific measures under the overall guidance of the federal authority is granted. Such measures vary not only from place to place but also from time to time. This methodology underlines the importance of enhanced coordination between different agencies (local, regional and federal) as well as information sharing between the stakeholders. However, this kind of systemic response is conspicuous by its absence in emerging economies.

Is Privatization of Aviation Security the Right Answer

In view of the strong threats from highly organized groups of terrorists, there is near consensus that the core security aspects in aviation should continue to remain the prerogative of the state. Policing has traditionally been a state activity. It has been believed that empowerment of any private agency to the extent of empowerment of police officers will result in massive abuse of power. Justice would become a commodity that the rich and the powerful would purchase. How different is it from the reality?

With all these arguments in favor of providing security by the state, a number of countries have still opted for privatization of different functions of security. For instance, in USA privately contracted screeners at San Francisco International Airport (SFO) and a dozen other airports do the screening. Legally, in Europe airport security is the responsibility of the airport operator. Whether the screening is carried out by the airport or a security company varies from country to country, but in no case is it carried out directly by the national government aviation security agency.

In most of the airports outside Europe (viz. in USA) screening is carried out by a government agency, but the rest of the security apparatus is the responsibility of the airport security director. Numerous

examples of divided security have been reported at airports over the past decade, where certain responsibilities have fallen between the cracks and neither the airport nor the government agency was on top of the problem. The economic losses that the airlines suffer due to inefficient and invasive security checks are common for all airlines and therefore no airline has any interest in systems improvement, as it does not result in sustainable competitive advantage for them. In general, privatization is associated with cost efficiency (especially long-run costs), better access to human resources and the capability for ad hoc just-in-time performance. Even if some functions were to be privatized, that would result in some gains in productivity and a consequent reduction in the cost, it is highly unlikely that the gains would be shared with the users.

The role and responsibilities of the security/policing agencies, which play a crucial role in maintaining security at the airports, vary from airport to airport and country to country, as the threat perception varies and security requirements cannot be standardized. Accordingly the security manual, procedures and budgets also vary.

It should also be recognized that the systemic policy response needs to become smarter as well as faster to be capable of not only handling ever increasing volume of traffic but also newer variety of threats. The International Air Transport Authority (IATA) has been stressing not only the importance of next generation of technology but also enhancing the flexibility of operational procedures.

Conclusion

The air transport security systems have advanced quite a bit over the past decade. Having said this, it needs to be emphasized that there is a constant danger of complacency and losing control in a blink of an eyelid. The primary concern of policy makers is allotment of scarce resources for such issues and driving consensus by highlighting the criticality of such matters. The combined security and economic pressures make it imperative to leverage any investment in airport security as efficiently as possible. The BEMOSA (2011) project co-financed by the European Community, will contribute significantly to this objective by focusing on the human factors involved in the security process. This issue also necessitates further research.

How can it be achieved is the million dollar question!

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An investigation into the sustainability-related courses of master programs in maritime education

From the history of the last century we need to be aware that our way of life is not sustainable. Throughout the past decade we have also seen a burgeoning exploration of the social, economical and environmental aspects of sustainable development (Giddings et al. 2002; Hopwood et al. 2005; Redclift 2005; Smit & Pilifosova 2003). Scholars across various disciplines have noticed their need to play their part in promoting sustainability. However, some scholars have their doubts towards the previously proposed approaches which are expected to facilitate sustainability. An ethical perspective is fundamentally important when addressing questions of sustainability (Shearman 1990). Newton (2003) indicated and explained that the present carrot and stick approach will not achieve sustainability, and an ethical approach, nevertheless, can sustain the best that is in us while empowering us to live in harmony with the natural environment. Does ethics and sustainability share something in common? Probably the most common usage of sustainability, as a part of the concept sustainable development, is a relatively modern concept defined in 1987 by the World Commission on Environment and Development as “a development that meets the needs of the present without compromising the ability of future generations to meet their own need.” Ethics is an ingrained philosophy of a thousand years telling people to do the right thing. More recently, however, sustainability has expanded into a concern for social and economic justice as essential factors in a stable and vital web of life. As a consequence, there are increasing connections between the fields of ethics and sustainability.

Jacobs (1995) argued that environmental issues are of an intrinsically ethical nature because the negative external problem characteristics of many environmental dilemmas raise not simply allocation questions but questions of how individual behavior affects others, human and non-human. O’Hara (1998) framed sustainability considerations in terms of the underlying ethical principles and examined how the ethical concept underlying mainline economic theory shaped our understanding of the connections between economics and the environment and what kind of ethical framework could, if operative, lead to what kind of sustainability.

*Ethical concept
contributes to or
undermines
sustainability?*

Huckle (2008) proposed to foster further consideration of sustainability as a frame of mind involving learners in an analysis of environmental ethics. To achieve genuine sustainability in any of the three areas, still yet in all of them, is perhaps expecting too much at the present time. Crane and Matten (2007) indicated that there are few if any products, businesses, or industries that can confidently

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claim to be sustainable in the full sense of the world.

There has been burgeoning research on sustainable development in the maritime industry; however, what is quite different from the arguments stated in the previous part is that many publications are considering sustainability in the maritime industry mainly and repeatedly from perspectives of safety, environment and risk management aspects. Hence, apart from the great achievements researchers have made, another field of study towards sustainability seems to be explored and discussed. It probably is widely agreed that greed, fraud, and a lack of ethical conduct would have led to the collapse of organizations. Similarly, the shipping industry is not an exception in confronting ethical dilemmas. Just like a variety of internal and external pressures can lead a man down the wrong path, a first misstep taken by a company could also lead to a slippery slope of hurting stakeholders, the community and reputation of a company. So it is necessary for shipping companies to follow strict code of conduct in terms of ethics and it is almost essential for companies to maintain an ethical corporate environment and exercise integrity-rich behavior.

Relating safety, environment, risk management and human factors to maritime sustainability

Although sustainability and ethics are of increasing public importance, there is more literature research that can be conducted to reveal the association between sustainability and a practitioners' ethical behavior in the maritime industry. It is understood that IMO put safety culture and environment stewardship, education and training in maritime professions, and support for seafarers as of highest priorities. In addition, previous literatures indeed put voluminous descriptions and clarifications on safety issues, environment concerns and risk management that might have impacts on sustainability in maritime industry.

Lu and Yang (2010) examined the importance of safety and safety-related leadership to explain workers' self-reported safety behaviors in the container terminal context and empirically evaluated safety leadership dimensions. Further, Lu and Yang (2011) empirically evaluated the safety climate and safety behaviour in the passenger ferry context and international port context separately, each of which is one of the most risky operations in the service industry. Lai et al. (2011) proposed and defined a concept of green shipping practices as environmental management practices undertaken by shipping firms with an emphasis on waste reduction and resource conservation. Lat et al. (2011) argued that there are potential gains from pursuing environmental protection by improving shipping activities. Previous studies in transport areas have shown that 60-90% of all accidents at sea or in the air can be attributed to the "human factor" which includes carelessness or recklessness under commercial pressure, a misplaced sense of overconfidence, or a lack of either knowledge or experience claimed Talley et al. (2006).

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Since the marine transportation is a highly regulated global industry, the safe and efficient operation of ships, and the stricter legislation from governments and international organizations are of a high priority for all maritime industry players; Kristiansen (2005) covered all those aspects of maritime risk and safety from engineering and operational perspectives, as well as regulatory and health and safety requirements.

Yip (2008) investigated port traffic risk issues by discussing historic accidents in the Hong Kong port. Search finding identified factors that can contribute to reducing the security level of port accidents. The port of registration, vessel types and the accident type are critical to the number of injuries and fatalities.



Photograph by Fang Zhang (2013)

Furger (1997) argued that the difficulties of measuring the benefits of regulations and policies towards environmental control were limited, and the cost of evaluating the benefits was also increased, thinking of the marine industry as one of systems of self-governance, Furger (1997) illustrated his argument by discussing the case of the international maritime industry and outlined an innovative approach to the management of environmental risks. Lansing and Petersen (2011) pointed out a business dilemma for ship-owners in the situation of a Somali pirate, furthermore, Lansing and Petersen (2011) demonstrated that adopting the approach to risk management based primarily on technical requirements is likely to overlook the social and organizational nature of many environmental risks. A more recent study about the significance of ethics in maritime industry was conducted by Lu and Lin (2013). Lu and Lin (2013) empirically examined the effects of ethical

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leadership and ethical climate on employee ethical behavior in the international port context using survey data collected from 128 respondents who worked in Taiwan. This is regarded as the pivotal research that studies the significance of ethics in the maritime industry.

Education, ethics and sustainability

Drewry Manning (2012) concluded that the world merchant fleet is projected to grow by the end of 2016, from 55,000 vessels in 2005, to 57,700 vessels in 2016. Yet, the demand for officers could be reduced due to the decrease of deliveries of new ships. Moreover, the vessels are getting bigger and bigger, which could lead to a reduction in employment of officers. Despite this, the total officer requirement will rise from 560,000 in 2011 to 591,000 in 2016 according to Drewry Manning (2012). Li and Wonham (1999) argued that the problem of the shortage of officers is the quality of their training instead of truly lacking in quantities. Furthermore, the relationship between the shortage of officers and the maritime education and training and a wide range of differences in the quality of maritime education and training around the globe were discussed. A “human decapitalization of maritime personnel” is currently taking place and is urged for efforts in order to ensure that future positions in maritime administration and Port State Control can be filled with the specialized personnel that are needed for this track. Safety, security, shipping’s environmental credentials, and indeed the whole future sustainability of the shipping industry are all dependent to a great extent on the cultivation of capable and effective manpower resources (The Human Element in Shipping, 2003). O’Neil (2003) argued that education and training relevant to sustainable development and integrated management practice are necessarily to be both widely and methodically available, especially in the initial stages of Maritime Education and Training (MET).

With the rapid development of the shipping industry, employees of higher caliber are increasingly needed and thus tailor-made postgraduate programs in maritime sections are needed as well in order to respond to the ever-changing industry. According to Collins et al. (2013), more than 200 publications that address issues associated with teaching business ethics has been revealed after a review of articles of best practices for teaching business ethics in general. However, among these publications, there are few about how to combine ethics contents with maritime education. The intent of this study is to investigate the top maritime programs to see if there exist best study modules already. United Nations Educational, Scientific and Cultural Organization (UNESCO) has also stated in 1997 that ethical values are the principle factor in social cohesion and the most effective agent of change and transformation. UNESCO acknowledge that achieving sustainability depend ultimately on changes in behaviors and lifestyles. It is understood that the scientific and intellectual communities bear a particular moral responsibility, and the link between ethics and science will be key to solving many of the problems of the future. In this regard, education and public awareness play a vital role in cultivating conditions conducive to sustainable development. Education, in the broadest sense of the term, is to shape ethical values. In addition, education is also imperative in empowering people to use their ethical values to make informed and ethical choices.

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Nurturing the ethical leadership and ethical climate in an organization are regarded as an effective way to promote ethical behaviors. Ethics, values and principles have to be translated into explicit regulations, policies and programs in order to be interpreted by engaged learners. As Huckle (2006) mentioned, learners should engage in analysis of the diverse meanings of sustainable development in terms of politics. Such analysis could contribute to their political literacy, and together with the social and moral responsibility fostered by sustainability, and advances their education as global citizens. Admittedly, it often takes training to even recognize an ethical dilemma, so doing the right thing requires ethics training for environmental professionals. As mentioned by Taback and Ramanan (2013), this has been evolved over a 20-year period starting from the late 1980s.



Tuna et al. (2002) found that the recent rapid advances in technology have increasingly changed almost all aspects of human-life and thus accelerated the required changes in teaching and learning approaches. Tuna et al. (2012) further argued that the education has to be structured in compliance with the targeted needs of the learners, which means that as the needs change, the relevant education systems have to change so as to meet the new requirements.

IMO (2013) acknowledges the indispensable role of maritime transport in a sustainable future global economy as it is the most environmentally sound mode of mass transport, both in terms of energy efficiency and the prevention of pollution. These environmental, social and economic dimensions of maritime transport are equally important and should be fully recognized in any strategy, policy, regulatory framework or action.

It is worth noting that in order to strengthen maritime education and the labour market within the maritime cluster ensuring an inflow of highly skilled labour, a positive image of maritime activities and appealing career prospects is necessary. Ng et al. (2009) investigated students from four different universities and found the mutable requirements within the maritime industry are the critical factor in aspiring practitioners to pursue postgraduate maritime degrees. Such programs are pivotal in preparing maritime professionals with human capital management and thus to ensure ongoing excellence and provisions of effective services within the ever-changing maritime industry. Froholdt (2010) showed that the level of knowledge is declining at sea and ashore and there is a need for broader competencies than the ones offered today in existing STCW education. It was expressed that some companies employ people from other industrial sectors, however this is not without a challenge, as these people lack knowledge about the business. Finally, this challenge already takes

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place within a demarcated area of the maritime cluster, in the offshore sector, where there is a lack of maritime professionals and people from other sectors are being employed who lack the same knowledge.

It is widely agreed that education is the most effective means that society possesses for confronting the challenges of the future (UNESCO 1997). To ensure a sustainable development of the maritime industry, education, in its broadest sense, must play a vital part of all efforts to attract new upcoming generations, create specialized personnel, and foster ethics for the needs of the sustainable development. Education serves society in a variety of ways. Were all people to be educated and possess relevant abilities and qualities, the world's problems would not be automatically solved. Education is also the means for disseminating knowledge and skills, for bringing about desired changes in behaviors, values and lifestyles. Many firms in the maritime sector also see the need to play their part in promoting awareness of education in order to explore environmental and social issues. According to the broad sense of ethics education advocated by UNESCO (1997), the ethics education in maritime section will serve as a mean to:

- Bring about the ethics in behaviour and lifestyle that are needed to achieve sustainable development in the maritime industry, which will also bolster workforce safety, environment friendly and corporate social responsibility;
- Disseminate business ethics, corresponding knowledge, know-how and skills that are needed to bring about sustainable operations and management in the maritime industry;
- Ensure an informed managerial populace that is prepared to make moral decisions and support changes towards sustainability in the maritime industry.

According to the survey analysis released by the Aspen Institute's biennial beyond Grey Pinstripes (2011-2012), recent development of ethics training and education has been reveal to have increased among the top 100 universities. Moreover, Christensen et al. (2007) discussed the ethics, CSR and sustainability education in the Financial Times Top 50 global business schools. Christensen et al. (2007) found out that ethics are usually taught combined with other topics such as CSR and sustainability among the Top 50 global business schools. Nevertheless, does the same happen with the world's highly ranked shipping universities? Hopefully answers could be found in the following section.

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Methodology

Assumptions were made here that postgraduate programs in maritime studies, which are in well-managed structures, and together with relevant contents and qualified teaching staff, will make effective senses and add values to students from industry. Students' abilities are supposed to be enhanced so as to meet the needs of the latest development within the maritime industry.

The authors reviewed the curriculum of MSc programs or Postgraduate diploma programs relevant to maritime area offered by eleven representative universities. They are the World Maritime University (WMU) (2013) of Sweden, Cardiff University Business School (2013) of the UK, The Hong Kong Polytechnic University (2013) of Hong Kong, China, University of Antwerp (2013) of Belgium, Nanyang Technological University (2013) of Singapore, Dalian Maritime University (2013) of China, University of Piraeus (2013) of Greece, Delft University of Technology (2013) of the Netherlands, Technical University of Denmark (2013), University of Plymouth (2013) of the UK, and Cass Business School City University London (2013) of the UK. These universities offer master or postgraduate diploma programs in maritime section, such as MSc/PgD in International Shipping and Transport Logistics offered by the Hong Kong Polytechnic University, MSc in Maritime Economics and Logistics, MSc in Maritime Affairs offered by the WMU, and a Pg. Dip. in Transport and Logistics Management, MSc in Transport & Maritime Economics and MSc in Transport and Maritime Management all offered by the University of Antwerp. Courses associated with safety, environment, human element and risk management were extracted from the representative universities as the elements conducive to sustainability. Although details of these programs may differ, they are serving to allow graduates to enter into maritime industry, and to enhance their abilities in adding values to the organization they are serving or about to serve in the future. Furthermore, close scrutiny of the details of these programs, including the environment, safety, risk management, human factors required courses, have actually formed the basis of a new program that incorporate ethics into the maritime education.

Our analysis shall mainly cover the following areas: Sustainability, environment, safety, human factors, risk management and so on. Investigations are about the relative emphasis on each area as measured by the curriculum of selected universities.

- Is sustainability covered by these programs of the universities?
- If sustainability is covered, is it required or optional?
- Is safety covered in these programs at the universities?
- If safety is covered, is it required or optional?
- Is environment covered in these programs at the universities?
- If environment is covered, is it required or optional?
- Are human factors covered in these programs at the universities?
- If human factors are covered, are they required or optional?
- Is risk management covered in these programs at the universities?
- If risk management is covered, is it required or optional?
- How many courses in total out of the curriculum are covering sustainability-related contents?
- How many courses in total are compulsory sustainability-related ones out of the curriculum?

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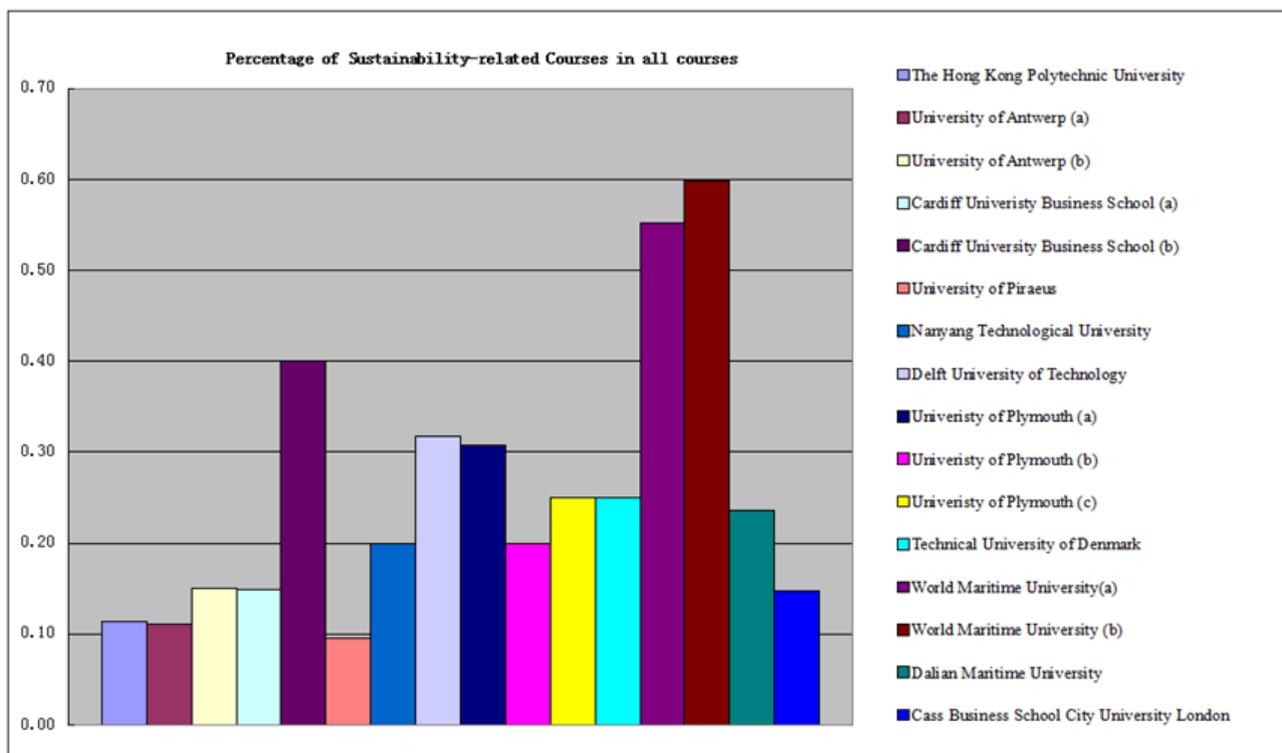
On basis of the above lists, we begin discussing our findings on whether those topics are covered in relevant courses of maritime-related programs provided by each school, and whether the courses are required to be taken in order to fulfill the requirements of a degree.

Analysis of curriculum of maritime-related master programs

Even though more and more researchers consider ethics as one of the most important factors that lead to sustainable development of maritime industry, maritime education has not yet widely been incorporated ethics contents. An investigation was conducted into eleven of the world’s acknowledged universities which offer sixteen maritime programs in total. Authors have evaluated and reviewed the curriculum of sixteen master’s programs in maritime section at eleven world acknowledged universities.

Results have showed that courses containing ethics are few. Additionally, if there are any courses concerned with ethics, they are taught together with other topics. Results also reveal that comparing with other topics such as environment, safety, and risk management, the percentage of ethics courses included in universities’ curriculum is relatively lower. The sample of this investigation is primarily selected from the world’s highly ranked shipping universities. Due to the limited access to some of the programs’ curriculum provided by world’s acknowledged shipping universities, the accuracy may be subject to change in reality due to the limitations of this investigation; however, information collected from sixteen world’s acknowledged universities in maritime education do shed light on their commitment to many aspects such as environment, safety, human elements and sustainability concerns in maritime section.

Figure 4. Percentage of Sustainability-related Courses in all investigated maritime programs as of 2013



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According to Figure 4 above, it is found that the World Maritime University and Cardiff University Business School have a better performance in maritime sustainability education of master studies. Both schools provide more compulsory or optional courses that are relevant to ethics and sustainability issues. Other schools are more or less having sustainability-related courses in their curriculum. One thing that needs to be noted here is that sustainability-related courses cover courses of safety, environment, human factors, risk management and ethics.

Table 4. Universities and MSc/ PgD in maritime programs

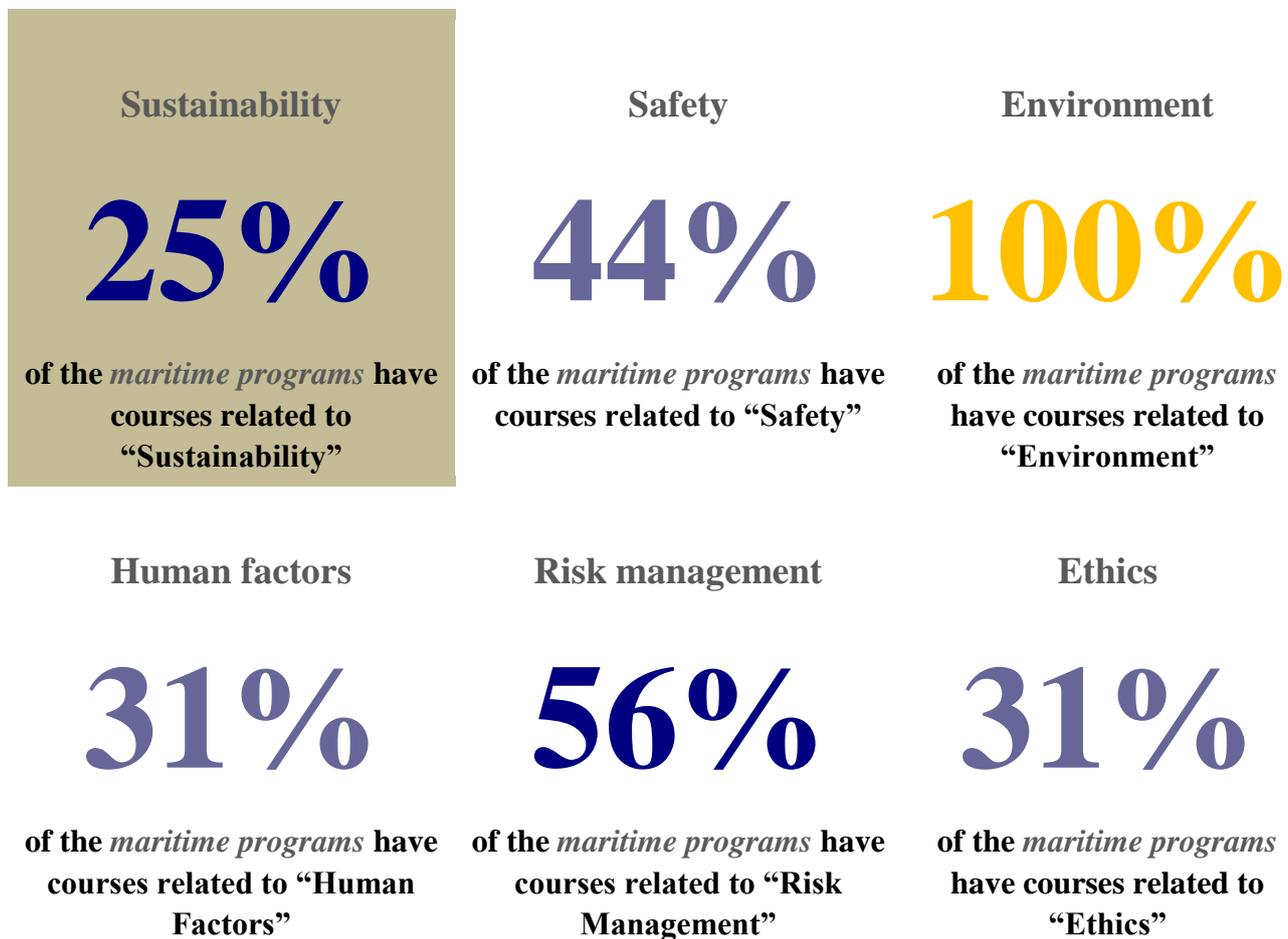
University	Programs	Marked in Figures
The Hong Kong Polytechnic University	MSc/PgD in International Shipping and Transport Logistics	
University of Antwerp	MSc in Transport & Maritime Management	University of Antwerp (a)
	MSc in Transport & Maritime Economics	University of Antwerp (b)
Cardiff University Business School	MSc in Marine Policy	Cardiff Uni Business (a)
	MSc in International Transport	Cardiff Uni Business (b)
University of Piraeus	MSc in Maritime Studies	
Nanyang Technological University	MSc in Maritime Studies	
Delft University of Technology	MSc in Coastal and Marine Engineering and Management	
University of Plymouth	MSc in Applied Marine Science	University of Plymouth (a)
	MSc in Coastal Engineering	University of Plymouth (b)
	Centre for Maritime Logistics, Economics and Finance	University of Plymouth (c)
Technical University of Denmark	MSc in Transport and Logistics	
World Maritime University	MSc in Maritime Environment & Ocean Management	World Maritime University (a)
	MSc in Maritime Safety & Environmental Administration	World Maritime University (b)
Dalian Maritime University & WMU	MSc in Maritime Safety & Environmental Management	
Cass Business School City University London	MSc in Shipping, Trade & Finance	

Data consolidated by C.Y. Tung International Centre for Maritime Studies (2013)

Of all the programs that have been reviewed by authors, it is interesting to find that 100% of the investigated programs provide courses relevant to environment issues in either core courses or elective courses. Over the past decades educational institutions, governmental and non-governmental organizations and other parties have endeavored to raise environmental awareness of both the public and various industries. This data provides some convincing evidence that all efforts have really paid off though much more efforts will still be needed on the way forward. It is especially important to note that universities which offer master programs in maritime studies are dedicated to improving common communities and the environment by incorporating relevant contents into the curriculum.

AN INVESTIGATION INTO THE SUSTAINABILITY-RELATED COURSES OF MASTER PROGRAMS IN MARITIME EDUCATION

Of all the programs that have been investigated by authors, how many maritime programs are providing courses which cover sustainability issues?



However, when it comes to the attention to maritime “sustainability”, far fewer programs have achieved that. One primary reason may be that universities which provide such master programs in maritime studies have offered general courses on “sustainability” under the School of Arts and Sociology while have not taken the real situation into further consideration. It is common to see that motivation of students taking master programs in maritime studies varies from region to region.

In Europe, students tend to pursue the master degree in line with their career development and these students usually possess several years working experience. Thinking deeper, the fact that students who have working experience does not necessarily mean that they have obtained a relevant education background earlier. That’s why they wish to make up for that background whilst obtaining professional knowledge that might meet the requirements of potential employers. The world is changing rapidly, and so is the shipping industry. Such rapid change can possibly act as a catalyze to foster the need for tailor-made, postgraduate programs in maritime studies, and students, accordingly, will search for specialized knowledge dedicated to the industry concerned. In this regards, master programs in maritime studies are necessary to have contents of sustainability in their curriculum so as to meet with the changing needs of potential students.

AN INVESTIGATION INTO THE SUSTAINABILITY-RELATED COURSES OF
MASTER PROGRAMS IN MARITIME EDUCATION

Of all of the total universities that have been investigated by authors, how many universities are providing courses which cover sustainability issues?



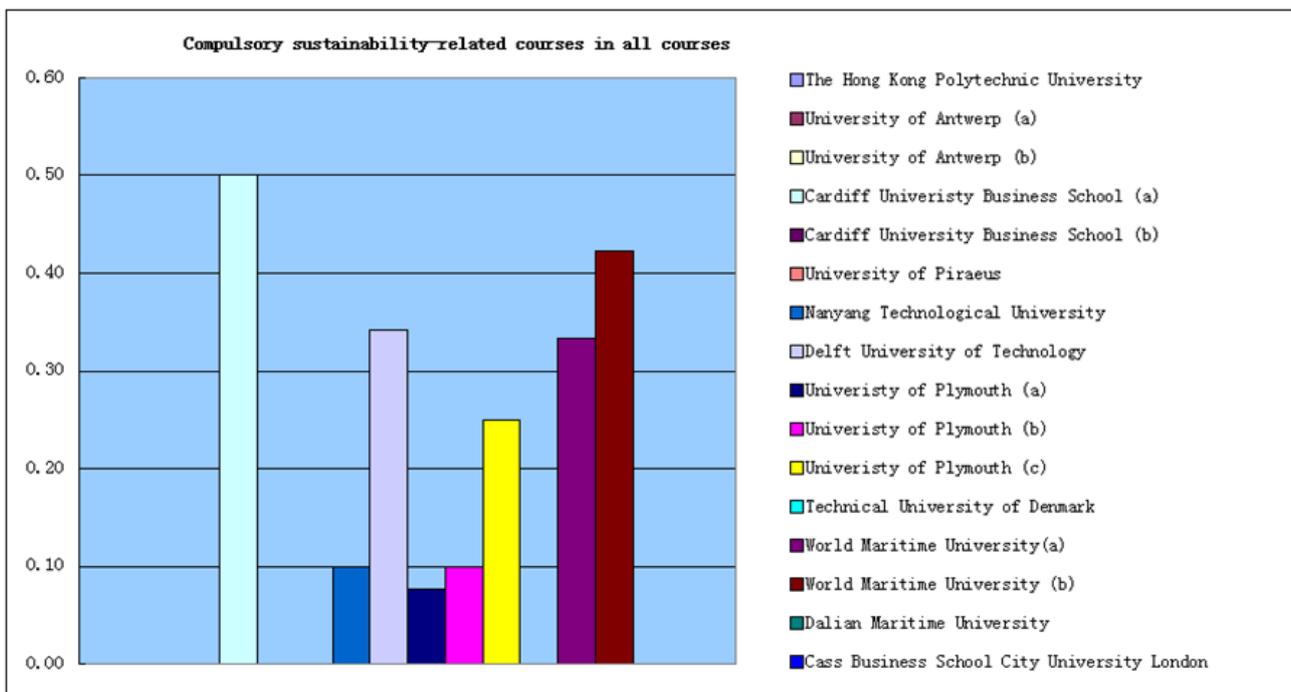
As for the contents of "ethics", courses, if any, related to ethics are all similarly taught together with Corporate Social Responsibility (CSR) and sustainability. No ethics are taught in combination with other topics. 31% here seems not that disappointing, nevertheless, only three out of eleven world's highly ranked shipping universities are actually teaching ethics, let alone the other shipping universities which might not be equipped with as impressive educators as in these schools. It is thus far from enough to only accumulate and then replicate practical experiences when teaching students ethics. Additionally, these eleven advanced shipping universities possess the best educators as well as research resources and thus are assumed to undertake the duty to teach advanced contents so that experiences accumulated from teaching practice would be gradually applied to the world wide shipping universities around the world.

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In order to extend previous research on sustainability education in maritime industry, the authors also included and reviewed the institutes or specialty centres in schools. The Plymouth University, for example, holds the Centre for Maritime Logistics, Economics and Finance. According to the profile on the official website, the research of the Centre focus upon sustainability, governance, risk, the logistics and supply chain management sector, economics and finance in an increasingly globalized world, in intensively international and interdisciplinary and enterprise oriented with a strong theoretical and practical basis. The research directions are included in our discussions here.

Furthermore, according to Figure 5, results tell us that 50% of the investigated universities and 45% of the maritime programs see sustainability related courses as compulsory ones. Moreover, it is of equal importance to notice that compulsory sustainability-related courses are only provided in three universities and four master programs in maritime studies, which accounts for a relatively lower percentage of all the courses. Particularly, several universities are not providing any compulsory sustainability-related courses, while such universities should have had better education resources and capabilities to do so.

Figure 5. Compulsory sustainability-related courses out of all courses among investigated universities



Having done the above analysis, authors of this study are quite sanguine about the future of master programs in maritime studies and hope that the other investigated universities might soon or later incorporate ethics, corporate social responsibilities and sustainability contents into maritime-related programs in order to meet with the changing requirements of high caliber personnel in the maritime industry.

There is no doubt that, at the heart of this new turning point, interdisciplinary education incorporating ethics content into maritime programs is a new vision for sustainable development. Furthermore, after having identified the significance of incorporating the ethics contents into the

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maritime education, the next step is to develop a holistic tool or a conceptual framework to evaluate the influence that ethics awareness raising, ethics behavior improving and ethical decision-making have on maritime sustainability.



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