Empowering the seafarer: manpower solution of the shipping industry

Inderveer Solanki
World Maritime University

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EMPOWERING THE SEAFARER:
MANPOWER SOLUTION OF THE SHIPPING INDUSTRY

By

INDERVEER SOLANKI
India

A dissertation submitted to the World Maritime University in partial fulfilment of the requirements for the award of the degree of

MASTER OF SCIENCE
In
MARITIME AFFAIRS
(MARITIME EDUCATION AND TRAINING)

2007

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Declaration

I certify that all the material in this dissertation that is not my own work has been identified, and that no material is included for which a degree has previously been conferred on me.

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Degree: Master of Science

Title of Dissertation: Empowering the Seafarer: Manpower Solution of the Shipping Industry

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Abstract

Title of dissertation: **Empowering the Seafarer: Manpower solution of the shipping Industry**

Degree: **Master of Science**

Specialized and sophisticated ship operations demand higher analytical skills, abilities and competencies. Seafarers are critical to the efficiency of these operations. Most shipping journals, magazines, shipping conferences and seminars highlight the crisis of shortage of well educated and trained manpower in shipping industry. Attracting talented youth and retention of trained seafarers is a challenge in the present circumstances.

The study examines the reasons why the talented youth is not attracted to a career at sea. The study is conducted using review of the literature, relevant career choice and development theories, motivation theories as well as an empirical study of 397 responses received from trainees, ship’s officers and ex-seafarer’s working ashore.

The study identifies the absence of life long career elements in shipping, lack of awareness and the shipping image as the main reasons for seafarers retention as well as inability to attract talented youth. Based on the findings the study develops a Seafarer Empowerment Model (SEM) using an empowerment process that empowers the seafarer with appropriate higher education. The higher education is provided in an integrated learning environment and delivered using hybrid learning technique. The delivery method uses the ‘learn while you earn’ concept to deliver the distance learning component at sea.

The study outlines different implementation possibilities of SEM. The effectiveness and benefits of the model is assessed using the empirical study of responses received from the respondents and motivation theories.

The study concludes using the results of analyses and surveys and the study makes subsequent recommendations pertaining to the implementation of the Seafarer Empowerment Model and suggests further investigation into implementation of the model. The study also suggests further research on using the empowerment model for empowerment of rating to reduce manpower shortage. The study recommends use of career choice and development theories for effective marketing a career at sea.

KEYWORDS: seafarer, manpower shortage, integrated learning, empowerment, career at sea, hybrid learning, life long learning, Seafarer empowerment Model, SEM
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My sincere thanks to Capt. A. Mahapatra, Head of the training division, IMO who encouraged me to take the field of research. My profound thanks to Prof. P. Donner, Associate Academic Dean, WMU for initiating me into the academic research methodology.

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Above all I would like to thank all the seafarers who responded to the questionnaires and dedicate this study to the entire seafaring community who invisibly brave the oceans night and day.
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AMETIAP</td>
<td>Association of Maritime Education Institutions in Asia Pacific</td>
</tr>
<tr>
<td>CEMT</td>
<td>Confederation of European Maritime Technology Societies</td>
</tr>
<tr>
<td>ECDIS</td>
<td>Electronic Chart Display and Information system</td>
</tr>
<tr>
<td>ECTS</td>
<td>European Credit Transfer and Accumulation System</td>
</tr>
<tr>
<td>IAMU</td>
<td>International Association of Maritime Universities</td>
</tr>
<tr>
<td>IBS</td>
<td>Integrated Bridge Systems</td>
</tr>
<tr>
<td>IGNOU</td>
<td>Indira Gandhi National Open University (India)</td>
</tr>
<tr>
<td>ILO</td>
<td>International Labour Organisation</td>
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<tr>
<td>IMCA</td>
<td>The International Marine Contractors Association</td>
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<tr>
<td>IMLA</td>
<td>International maritime Lecturers Association</td>
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<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
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<tr>
<td>LSM</td>
<td>Lloyd’s Ship Manager</td>
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<tr>
<td>MET</td>
<td>Maritime Education and Training</td>
</tr>
<tr>
<td>METHAR</td>
<td>Harmonization of European Maritime and Education and Training Schemes</td>
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<tr>
<td>METI</td>
<td>Maritime Education and Training Institutes</td>
</tr>
<tr>
<td>METNET</td>
<td>Thematic Network on Maritime Education, Training and Mobility of Seafarers</td>
</tr>
<tr>
<td>OECD</td>
<td>Organisation for Economic Cooperation and Development</td>
</tr>
<tr>
<td>SDM</td>
<td>Self Determination Theory</td>
</tr>
<tr>
<td>SEM</td>
<td>Seafarer Empowerment Model</td>
</tr>
<tr>
<td>SIRC</td>
<td>Seafarers International Research Centre</td>
</tr>
<tr>
<td>SSTP</td>
<td>Shipboard Structured Training Program</td>
</tr>
<tr>
<td>STCW</td>
<td>International Convention on Standards of Training, certification and Watchkeeping for Seafarers, 1978, as amended</td>
</tr>
<tr>
<td>TWA</td>
<td>Theory of work adjustment</td>
</tr>
<tr>
<td>WMU</td>
<td>World Maritime Institutes</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<tr>
<td>AASTMT</td>
<td>Arab Academy for Science, Technology and Maritime Transport</td>
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Chapter 1 Introduction

1.1 Background

Seaborne trade forms about 90% (Ma, 2007b) of the total world trade, and ship operation is one of the main activities of the trade. Rapid advancement in shipping related technology, plethora of regulations, capitalistic management practices and near zero tolerance to environmental disasters have made ship operations highly complex and demanding. Ship operations demand higher technical, managerial and operational skills. It is supported by a number of activities facilitated by government and private enterprises e.g. maritime administration, port authorities, classification societies, stevedoring companies and equipment manufacturers. For the shipping industry to be efficient in all its endeavours whether it is economic, safety or environmental protection, the manpower must be well educated and trained. Shortage of competent seafarers is looming large on the shipping industry and maritime clusters. BIMCO Manpower update 2005 (BIMCO, 2005), ("Hanseatic boss..." 2007), Fairplay ("Crew shortage..." 2007; Fairplay, 2007a) Lloyd’s shipping Economist (Mathews, 2007, p. 27), BIMCO Bulletin (Coleman, 2007; Grey, 2006), Lloyd’s Ship Manager ("Absent Seafarer..." 2007), 10th European Manning and training Conference(Pickles, 2007), 3rd Lloyd’s List training and manning conference ("Bull in..." 2007), The Institute of Marine Engineers (India) seminar (Sadanand, 2007), SIRC Symposium Proceedings (Gekara, 2007) and Maritime Policy & Management (Grewal & Haugstetter, 2007) all highlight the crisis of shortage of well educated and trained manpower on board ships but also in the maritime cluster.

The issue of lack of trained seafarer is also echoed by a number of entities, including the Secretary-General of IMO:

“While the updated study indicates that there is an overall surplus of ratings, it also shows that recruitment and retention levels need to be increased to meet anticipated demands, particularly for quality officers.” (Mitropoulos, 2007)
Today the ship’s master is akin to being the managing director of a company, and the company in this case is his ship. Also, the ship today itself is not isolated at but is just another link in the logistic chain (Stene, 2007). The technical advancement and specialization require the officers to be highly skilled and competent. Complex techno-dynamic shipboard operations in a highly demanding commercial environment constrained by regulations require the manpower for the future shipping industry to possess higher analytical ability. The number of employable or well qualified officers is lesser than the numbers officially given in statistics of countries (Chawala, 2007). Thus it is not only a question of numbers but also of the higher abilities. The problem can be attributed to two main factors, namely, inability to motivate students to choose seafaring as a lifelong career option and retention of seafarers.

Bimco/ISF manpower update 2005 had summarised that OECD countries\(^1\) and East European countries are an important supplier of officers, but the “Far East”\(^2\), and the Indian Sub-continent\(^3\) are becoming a key source of officers. High economic growth in these countries which averages about 6% (Appendix G) has made careers ashore more lucrative than sea careers. Moreover seafaring has a tendency to lose its charm due to social isolation, boredom, fatigue, and lack of social recognition. Furthermore, criminalization of seafarers for environmental harm makes matters worse.

The shipping Industry has been shying away from the manning issue and with manpower supply being inelastic\(^4\); the issue confronts it larger than before. The industry requires luring the talent to join this challenging industry which is the workhorse of the global trade. The number of active seafarers is also reducing

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\(^1\) OECD countries (North America, Western Europe, Japan, Cyprus, Malta, New Zealand, Australia.)
\(^2\) Far east Philippines, China, Korea, Taiwan, Indonesia, Malaysia, Thailand
\(^3\) Indian Sub continent includes middle east
\(^4\) It takes about three years to train and be qualified as a competent officer
faster than before because the talented seafarer of today does not want to be at sea throughout his life especially when jobs ashore are equally rewarding. The factors that influences student in making a career choice are salary, quality of working conditions, professional status and career prospects, availability or lack of alternate employment opportunities (Laubstein, 2007).

The popularity or attraction to a specific career is also influenced by the image of the career in society. More than money, professional Pride and reputation enjoyed in society drive young people towards a specific career (P. Mathews, 2004). Students learn about careers through interaction with the environment consisting of family, school, society, peer group, community (Super, 1990a) and the media. Students look up to parents, teachers and friends for guidance when making a career choice. Theory (Eccles, 1993; Holland, 1985; Super, 1990a) and research (Kniveton, 2004; Sukovieff, 2004; Young & Friesen, 1992) indicate that parents have high influence on student’s occupational aspirations. Kniveton (2004) established that the major motivating factor for students in choosing sea career is money, as they think it fulfils most of the requirements. However, parents look for long term factors in a job namely career development, self esteem, social status and working conditions. At present, a career at sea more or less meets the short term or, primary requirement of students, but it lacks the life long career need (Zade, 2000).

This dissertation, based on the empirical data collected through questionnaires developed by the author, will reveal that as sea service progresses, active seafarers loose motivation to sail as the career at sea would have satisfied their lower physiological needs through money, but the upper needs of social life, self esteem and self actualization (Maslow’s theory of motivation) remains unsatisfied. Needs change with time and if the job does not satisfy the want, it leads to dissatisfaction and wastage of trained human resources. Thus, there is mismatch between aspirations of today’s youth and what the career at sea offers.
Active seafarers also feel that after sometime their opportunity to grow by developing abilities and career stagnates. Sea career in general is a temporary career as most officers desire to leave sea after some years of sea service for employment ashore (Zade, 2003; Zade & Horck, 1997).

1.2 Research Objectives

This study first assesses the present scenario and issues related with a career at sea. Then based on review of research reports on the current manpower situation and initial informal discussion with ex-seafarers at WMU, it proposes the seafarer empowerment model (SEM). The model proposes to empower the seafarer through higher education that provides flexibility and multiple career options to him. The need and effectiveness of the proposed model is analyzed through responses from trainees, sailing officers and seafarers working ashore. As BIMCO/ISF 2005 Manpower update projects an excess (over 100,000) supply of ratings till 2015, ratings have been left out of the scope of the dissertation and seafarers mean ship officers where used.

The aim of the dissertation is to achieve the following objectives:

- Development of the Seafarer Empowerment Model (SEM)
- Proposal for effective implementation of SEM
- Assess the effectiveness of SEM

The main focus of the dissertation is to develop SEM as solution to manpower problems in the shipping industry using holistic concept of empowerment of seafarers through higher education provided in a flexible and integrated manner that is more effective and time efficient.
1.3 Research Methodology

The shipping industry and a seafaring career are invisible to society in so much as that society is unaware that the majority of goods coming to them are through the sea link by shipping and more so for the seafarer. Especially in landlocked cities and towns seafaring is not even heard of. Seafarers are best ambassadors of a seafaring career as they propagate the sea career into society. The society’s view about the career would largely depend on how the seafarers look at their career, what they communicate to people and how they think it can be improved.

To state the present scenario of a career at sea, three sets of questionnaires were designed - one each for trainees, ship’s officers and seafarers working ashore. The reasons for choosing different questionnaires were as seafarers working ashore have transited through the complete cycle and so may others. The following points are important to note:

Individual needs are dynamic i.e. they change with time. Due to technical development, change in regulations and commercial cycles, job requirement also change with time. With the growth of the world GDP, society’s perception of a profession also changes.

Based on informal interviews with ex-seafarers, personal experience of the author at sea and maritime training institute, critical analysis of previous research work (Gardener et al., 2006; PAL, 2003)& (Barnett et al., 2006; Zade, 2003), conference papers (IMLA, IAMU, LSM) and other articles, papers in shipping magazines (Fairplay, BIMCO review, Lloyd’s List, LSM, Maritime Asia, Seaways), a Seafarer Empowerment Model was designed and developed.

To assess the effectiveness of SEM another questionnaire was designed (Appendix-J). The final set of questionnaires consists of 3 parts:
- Questionnaire to assess the present scenario
- SEM
- Questionnaire to assess the effectiveness of SEM

The questionnaires were circulated through email using the network of WMU students, professors and ship’s officers associations to seafarers of different countries namely the Philippines, Indonesia, Thailand, China, India, Sweden, Egypt, Algeria, Japan, Germany and the Netherlands. A total of 397 responses were received from different countries. However, the percentage of response varied with the country. But the response with regards to core issues of boredom, isolation and need for further education and lifelong career were found to be common all across, so the responses have been analysed collectively.

The method of implementation and strategy of the model is outlined and effectiveness of the model is checked using responses. Conclusions, suggestions and recommendations have been drawn based on the responses received.

1.4 Literature Review

The dissertation deals with empowerment of seafarer and manpower solution. The literature review for the dissertation has been covered under the following topics:

1.4.1 Present Scenario

To establish the present scenario, availability of jobs and demand and supply situation have been established using, BIMCO/ISF 2005 Manpower update and then subsequent changes have been made based on statements by the industry in Lloyd’s list, Fairplay, Maritime Asia, Lloyd’s ship Manager. Concern of losing maritime skills base and its effect on economy was raised in the UK parliament in 1993 and 1994 (Committee, 1994). Gardener and Pettit (1996) concluded that seafaring skills were essential in 70% of the jobs in
maritime sectors. Since then similar reports that estimate demand and supply of seafarers ashore, effects of shortfall in supply and policy implications were made. (Gardener et al., 2006). These reports have been used in the dissertation to identify the study areas for empowerment. Dublin conference titled “Is the European seafarer Endangered Specie?” set the ball rolling in taking measures to attract talented youth to a career at sea in the EU.

The need for alternate path for seafarers was first brought out in 1997 by Zade and Horck in METHAR\(^5\) conclusions. METHAR identified a serious decline of interest of youth in taking sea career and recommended the need to enhance employability and mobility. METHAR discusses harmonization and cooperation of MET. This was followed up by the EC project METNET\(^6\) which established the above objectives through the concept of 4E Essentials, Extension, Enrichment, and Elevation. The last EC research on the subject of attracting seafarer through an alternate path is “The Mapping of Career Paths in the Maritime Industries”(Barnett et al., 2006). The recommendations and concern from these reports reflect in the EU Green Paper on maritime policy, para 2.5 “Developing Europe’s maritime skills and expanding sustainable maritime employment”. Though socio political paper but it forms an important document for this study as it outlines the need for development of alternative career paths to attract talented youth in the EU, hence need for empowerment of seafarers. The Reaction of the Industry to the green paper also presents a comprehensive view of the present situation.

The UK, Norway and Australia have also done some work in this direction but they are in a similar position as above. METNET has suggested the 4E model but it has not been adopted as yet (Laubstein, 2007). Laubstein proposed mid career post graduate studies at the time of transition from sea to shore; Studies to

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\(^5\) METHAR: Harmonisation of European Maritime and Education and training Schemes

\(^6\) METNET: Thematic Network on Maritime Education, Training and Mobility of Seafarers
be financed by the employer or government. Recruitment, retention and advancement model of a sea career profile with appropriate selection and human resource management was proposed by Barnett (2000).

1.4.2 **Motivation**

The second factor of shortage is that the sea career does not motivate seafarers to continue sailing for long. Motivation promotes job satisfaction, hence retention. As per Bent et al. motivation initiates sustaining behaviour towards attainment of certain goals (cited in Bassy, 2002). A great deal of research literature indicates that job satisfaction, job involvement, and organizational commitment is negatively correlated to retention (Chen & Robert, 2006). A link between motivational theories and career needs to be established to understand the reasons of retention. The needs theory (Maslow, 1987), Herzberg’s (Dixon, 2006) motivating theory, as are generic so have been used in the dissertation. In spite of good salary (extrinsic motivators) retention is an issue, hence self determination theory (SDM) and facilitation of intrinsic motivation, social development, and well being (Ryan & Deci, 2000) becomes relevant. There are other motivational theories like Adam’s Equity Theory, McClelland Three Needs Theory and Goal Setting Theory but they are not discussed in dissertation due to the possibility of digressing from the objective of the dissertation.

1.4.3 **Empowerment and Concepts**

Even though empowerment has become a widely used word in the social sciences, psychology, health, education fields and has been used at individual as well as community levels the process and theory of empowerment is developing. The literature dealing with the subject has only recently begun producing a systematic methodology of its own (Lee, 1994; Gutiérrez, Parsons & Cox, 1998). The concept and process has been well covered by Hur M.H. 2006 in “Empowerment in Terms of Theoretical Perspectives: Explaining the Typology
of the Process and Components across Disciplines”. This process has been used in this dissertation to develop the empowerment model.

1.4.4 Career Choice and development

Nearly half of prime active life of a person is spent on the job, hence it becomes important that the job chosen not only fulfils basic needs but also matches self concepts. Choice is affected by different factors including changing socio-economic and technical global environment. The role of career choosing and development theories is critical today to both the individual as well as the company. In shipping industry career choice theories have started making inroads and research on human factors is being done (Barnett, 2000, p. 5). The roots of the career development theory emerged with introduction of the concept of choosing vocation by Parsons (cited in Brown & Lent, 2004). There are more than ten theories on the subject. Osipow, (1990) suggests four major theories that follow:

- Holland’s Theory (Spokane, 1996)
- Theory of work Adjustment (TWA) (Dawis, 1996)
- Krumboltz’s learning theory of career choice and counselling (Mitchell & Krumboltz, 1996)
- Life Span, life space theory (Super, 1990b)

These theories have been briefly summarized in Appendix M
Chapter 2 Present Scenario of Seafarers

This chapter draws out the present state of seafarers in the context of job change profile, status of demand and supply of seafarers, reasons for talented youth not going to sea, and reasons why seafarers are leaving their sea careers. The status is assimilated through the earlier research work, the industry’s view in media and through analyses of responses collected in this study.

2.1 Job Profile

The world is dynamic where everything is on the move whether it is a galaxy, environment, organization, industry, technology or people. The shipping industry does not remain untouched by the change. Major changes in the maritime sector began with steam powered ships, today innovation and technology has not only revolutionized ship construction and powering of ships, but also the operation and management of ships (Card & Spencer, 2004). Increasing information technology has not only impacted ship communication and operations, but also ship documentation systems. Seafarers now need to have computer skills as well (PAL, 2003). Ship-owners are increasingly installing Integrated Bridge Systems (IBS) for navigation safety (Grinter, 2007).

Even perfect and precise technology can malfunction. That is when pandora of problem opens, which requires new dimensions of training (Gronberg, 2007). Barnett et al. (2006, p.140) concluded in their report that the ships officers have been found lacking in general management education. The Figure 2-1 clearly shows that all the influential forces whether it is economics, technology, accidents, environment or security, affect seafarers on board.
Figure 2.1 Matrix of driving forces presently influencing the seafarers
Source: Adapted by author from ABS technical papers (Card & Spencer, 2004)

The effect manifests in the form of loss of jobs, changes in the job profile, fatigue, need to develop new abilities competence, criminalization, discrimination on account of security, and even isolation or denial of basic rights (Mukherjee, 2006). Dr Balkin, head of IMO legal affairs and external affairs said, “fewer crew members, increased and continually changing new technology on board and relentless pressure of fast turn around in ports, life for seafarers were becoming much more pressured than in the past.”

Thus rapid changes in technology, regulations, management practices and commercial pressures, multinational and multicultural manning, has drastically changed the job profile of seafarers. Today’s masters not only need nerves of steel but also skills of human resource management, leadership and crisis management, integrated navigation management along with commercial management. As depicted in Figure 2.2, the ship’s master has to perform multiple tasks taking into account various factors including technical, legal,
commercial, environmental, security, safety, cultural, human and external forces in conducting his ship. The task becomes even more complex with size (Emma Maersk\(^7\), type (LNG) and sophistication (DP) of vessels being conducted.

Mr. Nakaya of NYK Ship management very aptly sums up the expected competency of a seafarer:

“\[\text{The seafarer’s quality should be measured by the ability of the seafarer to quickly adapt to the necessities of trade and be able to operate or function on the modern sophisticated unit entrusted to him.}\]” (Sadanand, 2007)

Now the question arises – is there sufficient manpower with above capabilities,

\(^7\) Emma Maersk, the largest container vessel (11000 TEU’s) and longest vessel in use. It has high-scale automation and complete monitoring by advanced computer systems and can be operated by a crew of just 13. Source: https://www.maerskline.com
if not then what requires to be done? Will the short modular courses do the needful? The point is that the time has come to go beyond short term “quick fix” solutions and look at the macro level with long-term solutions, which is the basis of this study. But before delving into it deeper, a look is necessary at the present state of maritime manpower as a justification for this study.

Where is this leading to?

2.2 Present Status of Maritime Manpower

2.2.1 Is the shortage real?

BIMCO 2005 manpower update estimates a shortfall of 27000 officers by 2015 while the estimates for 2005 were at 10,000. These estimates are sensitive to various factors namely training, wastage and fleet growth. Assuming training output remains as projected, then the industry is likely to face shortage of manpower in the near future as the fleet growth rate has already increased from 5.7% in 2005 to 6.4% in 2006 (ISL, 2006) (Appendix-G). The shortage is likely to be enhanced by the increase in wastage as the economic growth (Appendix-G) in most of seafaring supplying countries has increased and there is skill shortage all across in maritime clusters. Five thousand new ships are contracted to be delivered by 2010, unless there is a downturn in the shipping market, shortage of officers will be compounded (Mathews, 2007, p. 17). The declining training enrolment makes it clear that the shortage of officers is looming large on us. Student enrolment in the Philippines for both Marine Transportation and Marine Engineering courses over the past five years has declined dramatically. The Drop-out rate has increased and passing percentage has decreased (Aldanese, 2006). The shortage of seafarers is also affecting developing countries. Indian ship owners have been permitted to engage foreign seafarers as the shortage of quality crews has become more acute ("Indians to ..." 2007c). Even in China the supply of trainees is lagging behind the supply of new ships supply. ("the manpower..." 2007a). The manpower crisis is deeper than it is reflected as the
shortage becomes more if one looks for competent seafarers. North of England in its 2007 management report reveals:

“An issue causing concern throughout the industry is the difficulty that ship owners are facing in recruiting competent experienced seafarers and the effect that this may have on the efficient operation of ships and subsequent claims.”

The situation in the maritime cluster is no better. DNV has opened four training academies for class surveyors and their own requirement will be 500 by 2010. Lloyd's register is facing similar problem (Kieth, 2007). IMCA chief Mr. Williams in Offshore Technology Conference said “Wanted: thousands upon thousands of marine professionals”. He was serious, as the industry needs not only master mariners and chief engineers but also marine construction crew and support teams (Williams 2007). Similar voices are heard in the shipbuilding industry, ports, and dredging sectors. Jobs are created, where are the takers? This rhetorical question is in fact even asked in Singapore and countries alike (Tan, 2007). “For marine insurers, scarcity of experienced, qualified seafarers is a significant challenge” (Fosmo, 2007). “As for ship management, Japan’s urgent priority is how to find shore-based superintendents” (Kayahara, 2007). “Indian shipyards, now boasting a huge order book valued at $3.7Bn, are facing an acute shortage in technical manpower” (Fairplay, 2007b). The industry ashore and afloat is actually suffering from a shortage of competent and experienced manpower who are needed to operate sophisticated ships efficiently and safely (Grey, 2006). The excellence of recruits depends on attracting the best youth (men and women) into maritime education and training (COM 275, 2006). Thus it is required not only to attract youth but the talented youth to shipping, who can be appropriately trained and educated to obtain higher skills.
2.2.2 Why shortage?

At the broad outset shortage of skilled and competent seafarers can be attributed to three main factors, namely, inability to attract good students, inadequate training and education, and retention of seafarers.

The study looks at the aforementioned factors in detail.

2.2.3 Factors affecting seafaring as a career choice

A student may be attracted to a career for different reasons depending on his own aptitude, social environment, geographical location, awareness and needs from the career. A student makes a career choice that will satisfy his dynamic needs and career requirements throughout the lifespan (Super, 1990b), based on matching of self perception of abilities with career requirements (Holland, 1985). On learning about self and job requirements through social learning behavior, the students make their choice (Mitchell & Krumboltz, 1996). His social learning behavior comprises information learnt from the environment i.e. workers, parents, teachers, society and media. These mediums of career propagation will propagate what they know about the career. The knowledge and awareness of the career may be through observation, reading books, newspaper, movies, television or if the seafarer happens to be a friend, relative or in the neighborhood. Newspapers rarely carry news about careers at sea except for news of mishaps or accidents. Books or cartoons on shipping are a rare commodity now. TV media only covers shipping if there is major causality or accident or pollution. Who would want to go to sea after seeing the film Titanic?

The Seafarer is a major propagator of a career at sea and he would recommend it if he is satisfied with his career at sea. In present circumstances he would sing the tune, such as “I would like to have gone to sea ….But!” or “I wouldn’t go to sea if I were you, lad” (Evans, 2000).
The Mapping Career Paths in Maritime Industries report concluded that location of home, family influence, good career prospects, long-term interest in the sea and travel as main attractions for seafarers hailing from EU countries (Southampton, 2005). The OECD project report on availability and training of seafarers career at sea covering EU countries concluded that pay and conditions, job satisfaction, independence and attractive prospects were the main reasons for attraction to a career (PAL, 2003). Stevenson did an age wise analysis of needs of seafarers from the UK and found that pay and leave were of more significance to the age group up to 30 and having a responsible job, and factors of making their own decision and having reliable fellow workers gained influence after joining the ship. Research findings also indicate that family influence was least among the different factors (Stevenson, 1998).

To find the present state of a seafaring career, the seafarer has been used as sample in the research study as he has been in the same position before and he is the main ambassador of promoting the career at sea. He sometimes plays the role of a career counselor with respect to choosing a sea career. Views of society about the career is important as the student learns about the career from society (family, teachers and friends) (Mitchell & Krumboltz, 1996). The Family of a seafarer also plays a critical role in promoting the career as they carry with them knowledge, awareness and reflection of the career (Trice & Tillapaugh, 1991b). The research indicates that one of the main media of passing careers information on careers at sea is the seafaring families. A survey of UK Cadets by Peckan et al. (2003) found that 41% of respondents knew about the seafaring from a family member at sea.

2.2.4 Perceptions of the seafarer

The seafarer’s views on the factors that influence the seafaring career choice, reflection of his sea service, perception of his family and society about the career
and whether he would promote the career at sea or not has been collected using three sets of questionnaires. There is one each for cadets, ship’s officers and seafarers working ashore. The questionnaires were formed and edited on the basis of informal discussions with ex seafarer students at WMU, faculty at WMU and earlier research work researched by the author. The questionnaire was circulated amongst ex seafarer students at WMU and their input was taken to edit the questionnaire.

2.3 The Scope of Survey

A total of 397 responses, that consisted of 147 cadets, 179 ship’s officers and 71 ex-seafarers working ashore were collected. The data has been collected from 22 different countries (Appendix A). The responses together with earlier research work and literature is analyzed below to encapsulate the present status of the career.

2.4 Influencing Factors

The major influencing factors that attracted seafarers in the past have been family influence, pay and conditions, good career prospects, adventure, foreign travel, independence and flexibility. These factors were chosen for research on the basis of discussion with ex seafarers of different nationalities studying at WMU and earlier research (PAL, 2003; Southampton, 2005; Stevenson, 1998). To find the influence of different factors that attracted them as youth in the past, to this career, respondents were asked to weigh them on a Likert scale from 1 to 5 (No influence to very high influence).

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8 The Likert scale assigns value to an opinion from 1 to 5 and the responses in respective categories are multiplied and then divided by total number of responses to get an average weightage. Percentage has been obtained by ignoring the neither category.
Pay and conditions has the maximum influence on seafarers when choosing a career whether working ashore, sailing or as cadets. The response reflected 3.88 for pay and conditions whereas even in the days of “No frills Airlines” foreign travel still attracted seafarers with a weightage of 3.68. Good career prospects and adventure were found to be lower in the scale at an average of 3.35 and 3.46, respectively. The Independence of decision making is at 3.51 and flexibility is at lower level, of 2.98. Considering the data separately based on different stages (trainee, Ships officer, Seafarer working ashore); flexibility is at a much lowered level of 2.63 for seafarers working ashore, possibly due to inadequate educational qualification for job ashore, reported by 17 respondents, (Appendix-E).

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9 Figures are on likert scale
However the most influencing factor on students when they are choosing a career is parents (Kniveton, 2004) but for a seafaring career this factor was found at the lowest level of 2.77 in this research. Hence, the factor of family, relatives, friends and neighbor influence, needs further analysis.

The influence of attraction factors change with time, basis socio-economic conditions of the country and individuals. When segregating the data in different stages, it is evident that the value of all influencing factors has decreased (apparently this reflects the present status) and the precedence has also changed on the basis of stages e.g. for ship’s officers. Independence is the most influential factor and compared foreign travel, whereas, for cadets it is pay and

![Figure 2-4: Trends of influencing factors with time and stage of career.](image)

Source: Author, 2007

conditions and foreign travel. Good career prospects records lower level 3.14 for ship officers as compared to 3.6 for cadets, probably officers can see dead end ahead.

Figure 2.4 indicate the change of influencing factors over time. The variation in the influencing factors may be explained in terms of different stages in life. That is, as a bachelor would look at the immediate physical needs gratification through money, whereas after marriage in addition to the other needs he is looking for higher social need and need for belongingness and thereafter once he
reaches the rank of a master, he is looking for more challenges in the job and self esteem or self actualization needs (Maslow, 1987). Hence once a particular need is gratified he is looking for other motivating factors in the career. Therefore as the influencing factors, the major motivators are reduced; the seafarer’s job satisfaction is also reduced with stages. Since the major motivators have reduced, therefore to keep him at sea, some other motivating factors are required. It has been concluded by the survey conducted by the author that the slight rise in all the factors for seafarers working ashore is primarily due to the contribution of sea service in securing their job ashore.

2.4.1 Family Influence
Parents have the maximum influence on a student when he is choosing a career (Kniveton, 2004). Traditional family connections in earlier times were the major influence (Stevenson, 1998). Looking at the reasons why in present times the influence is the least. Considering the response to the question on ranking of the career at sea by the seafarer’s parents, it was found that in cadet’s perception his parents rank sea career lower than society and friends, at 3.5, and seafarers themselves as parents rank the career at 2.25 for their sons and 1.4 for their daughters.

When the responses on society’s view about the career are compared with the
economic growth of major seafaring supplying countries it is evident that with economic growth the view of the career changes (Figures 2.7 and 2.8). So it is fair to say that seafarers and their families are not happy with the sea career choice and the image of the career has in society with changes in the economic scenario. Then the question arises, whether the seafarer and family will propagate the sea career choice or not?

<table>
<thead>
<tr>
<th>Figure 2.7: Image of sea career in society</th>
<th>Figure 2-8: GDP growth rate India and East Asia</th>
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2.4.2 Career Satisfaction

An individual would recommend a career if he is satisfied with his career and so is the case even with a seafarer. Moreover children are likely to take up his parent’s occupation if they perceive that their parents are satisfied in their occupation (Trice & Tillapaugh, 1991a). This also holds good vice versa.

The data shown in Figure 2.9 reflects that only about 50% of seafarer would recommend the seafaring career to their son, daughter, brother, sister and above average student. Hence the career does not enjoy the promotion from seafarers what it used to in the past when seafaring ran down for generations in a family. Over the years the image of the career in society has declined due to socio
economic change, as well as due to negative publicity by the media, which has affected the moral of the seafarers and family. In the case of shipping post *Erika*, *Prestige* and *Tricolor*, suicide, and murder cases on board, and criminalization of seafarers have negatively impacted the shipping image in society. ("Indians to..." 2007)

Figure 2.9: Recommendation by seafarer of career at sea
Source: Author, 2007

Figure 2.9 clearly reflects the sentiments of the seafarers and it is apparent that the situation is not encouraging. Comparing as per career stages, it shows that the active seafarers would recommend the career to a lesser percentage than the seafarers working ashore. The reason may be firstly that seafaring per se has helped them to get the job ashore, and secondly, seafarers ashore are now more satisfied and see a career path ashore for new joiners too.

The main reasons for not recommending the career at sea collected through responses are outlined as follows:

- There are better career options available ashore that offer similar pay scales. The pay differential has reduced so much that people ashore are getting more money than seafaring in the long run.
• Career at sea is not a life long career option.
• There is no social life and no social recognition of seafarers.
• Communication facilities on board ship are insufficient and whatever available is expensive, at present.
• There is no academic growth, life at sea stagnates and is monotonous after some time.
• No sense of belongingness to a company or organization in the era of outsourcing the management and operations of the ship who are responsible to recruit.
• Commercial pressure, stress, fatigue and criminalization are making life at sea difficult.

On further analysis of data in Figure 2.9, it is apparent that the number of women in shipping is not likely to increase fast. The seafarers are not likely to recommend the career to their daughters and sisters. Seafarers in some developing countries are finding difficulty in finding life a partner because there is no family life or social life. It has been found that separation from partner and family is one of the most significant causes of stress for seafarers' as factors influencing a decision to reduce planned sea service (Thomas et al., 2003).

The reasons for not recommending the seafaring career clearly reflects their job satisfaction level and hence motivation. Therefore, to attract talented youth to the industry the seafaring has to be made lifelong and attractive and then concentrated effort to change the image of the shipping and seafaring would be required.

2.4.3 Isolation and Boredom

The problem of boredom and isolation has existed in seafaring since man went to sea but one wonders if it continues even in the age of information communications and technology. 73% of respondents affirmed that they felt
Seafarers were “Isolated at sea, Isolated ashore”. In the olden days isolation was because of long sailing, a seafarer could be out of sight of land for months together. Today it exists on account of being in port but unable to step ashore for various reasons and very fast turn around in port. The seafarers lives even in this high-tech age is characterized by isolation, tedium, and confinement (Sampson & Wu, 2003).

Seafarer is separated from family and he gets isolated from other crew due to shortage of crew and multinational crew onboard. Ship managers rarely see him as it does not matter to them because he is a contracted laborer. When he comes ashore, he faces isolation from society because he does not have many friends or social circle. The size of the industry, different work cultures and ethics have created separate identity and camaraderie among seamen which reinforce isolation ashore. (Hind, 2007). Probably this is one of the reasons why ex seafarers working ashore felt that sea service did not assist them in adjusting ashore weightage of 3.1 on Likert scale.

It is difficult to think of boredom at sea where each watch is different from the preceding one with regards to weather, wind, temperature and on board activities. However, life on a becalmed sailing ship with hundreds of people was also found boring and it is said that “mutinies often began in Doldrums” (Weibust, 1976, p. 415). On modern ships equipped with integrated navigation gadgets and alarms, watch keeping even across the Baltic was told to be boring and monotonous\textsuperscript{10}. Seafarers’ response of 3.3\textsuperscript{11}, for career at sea to be boring is also indicative enough. This is also supported by a survey carried out by Chinese ship owners who suggests that lack of mental stimulation at sea is also hampering recruitment (Grey, 2007b).

\textsuperscript{10} Informal chats with officers on ferries during field trips
\textsuperscript{11} Likert scale
2.4.4 **Job satisfaction**

Job satisfaction is directly linked to needs of a person i.e. if his physiological and psychological needs are more or less being met he is satisfied. A seafarer spends about half of his prime life on board; hence the job environment influences his personality to a large extent. The seafarer on interaction with people and society, intrinsically or extrinsically leaves an opinion about seafaring with them. Thus his satisfaction index also affects the image of the career in society. With time needs of an individual and the job requirements change. Hence the satisfaction index collected has been spread over time. Seafarers were asked how they rank their careers with respect to satisfaction. Figure 2.10 to Figure 2.15 indicates the responses received.

**Figure 2.10: Job satisfaction combined (Likert scale)**
Source: Author, 2007

**Figure 2.11: Job satisfaction combined (Likert scale)**
Source: Author, 2007
The satisfaction level of ship’s officers in service (active seafarers), as well as seafarers working ashore varies with time and increases. It extending trend, it becomes very apparent that it is moving downwards and would result in complete frustration of seafarers if the trend continues.

2.4.4.1 Active seafarers

When considering the data (Figure 2.12) for active seafarers, it can be seen that the average satisfaction level goes up between 2 to 5 years, which is attributable
to the motivational factors of higher certificate of competency, promotion and increase in salary with promotion. But after 5 years until his present status the satisfaction level continuously drops. During this time he gets married has family responsibilities and may have reached the highest rank at sea. What is also observable is that the both categories (neither satisfied nor disappointed) have continuously grown to about 44%, whereas the satisfied and very satisfied percentage has dropped.

2.4.4.2 *Ex-seafarers working ashore*

The satisfaction levels of seafarers working ashore are higher than that of active seafarers throughout the period with a favorable differential of 15%. The reasons for this may be explained as most of ex seafarers working ashore have secured jobs ashore. In the hindsight, today’s satisfaction would also affect the perception of the past to some degree. What is distinctively visible from Figure 2.15 is that there is significant change in after 5 years of service, even though the “very satisfied” levels percentage has gone down, but the satisfaction level has gone up and the average percentage of the satisfaction category remains as high as 58%. The disappointed percentage is also reduced.

2.4.5 *Conclusion on Influencing Factors*

This part concludes the work done from part 2.1 to part 2.10. The research by (Stevenson, 1998) suggested that marriage was not a contributory factor when leaving the sea. This research done by the author clearly indicates a close link between family life and transition ashore. On further analysis of the data it is observed that satisfaction decreases after getting married and the transition ashore begins at this stage. But the maximum dissatisfaction occurs when the first child starts to go to school. At this stage the family need increases and motivation at sea reduces. The average age of a seafarer at the time when his
first child starts going to school is 34-35 and that is also the time when a seafarer reaches a top of his carrier (average age of command 33.6 years and promotion to chief engineer 33.8 years – based on the survey conducted by the author). This is the time when most seafarers working ashore have done the transition as the average age of transition ashore is 35.7 years. If during this time, or slightly before this, a motivating factor like education opportunity or job rotation between shore and sea is created, it can be reasonably concluded that the seafarer is likely to continue to sail longer.

By analyzing Figure 2.13 it is fairly evident that the percentage of “satisfied” seafarers ashore was higher and is attributable to the shore opportunities they got. The percentage of “disappointed seafarers” ashore is reducing whereas the percentage of active seafarers is increasing. The percentage of “neither” category of both is increasing but that of the seafarers ashore is less than active seafarers. Thus, one can reasonably conclude that one way to increase the level of satisfaction can be by providing a transition to job opportunities ashore.

Most of the speakers in the IMEI seminar “Training of Marine Engineers as Today and in Future” in Mumbai felt that the shipping industry need to offer holistic career advancement with an attractive career at shore after a reasonable stint at sea (Sadanand, 2007). This need was already researched and published for seafarers of EU and OECD countries (Commision, 2006; Commission & Zade, 2003; Southampton, 2005). This is possible by providing education necessary for the alternative career paths.

2.5 Attrition and Reasons

Retention of seafarers has been causing concern to the industry since the middle of the last century, when the first manpower crisis occurred. Ronald Hope, reported that 15,000 seafarers left each year as far back as 1954 (Grey, 1980, p.
vii). Glen et al. (2007) assumes a wastage rate of 6% per annum in their projections of UK certificated officers till 2022. The average age of wastage has been taken as 30 to 44 and 30 to 50. The research by the author evidences that average wastage age is 35.7 years. The issue in present times is that not only the wastage numbers have increased, but the age of officers leaving sea career has also come down. The concern seems to be rightly founded, as per the responses collected in this study; the average age of all officers who took shore jobs is 35.7 years whereas the average age of junior officers who shifted ashore is 27.5 which constitutes 20% of the responses collected.

The question is how to increase the average age of seafarers leaving sea or how to retain them longer at sea.

To answer these questions, it is required to assess the factors that influence attrition. Towards this, the respondents were asked to weigh three different factors, namely family life, coincidental opportunity, academic growth and different career. The most influencing factor influencing transition is family life with 4.3 on the Likert scale of 5. This also correlates with earlier conclusion that seafarers are most dissatisfied when the first child starts to go to school i.e. when they want to shift ashore. Academic growth and different careers also received good amount of responses a 3.9 level influence and coincidental opportunity was at 3.26. The other categories did not generate many responses worth considering. Thus it is family life, academic growth and different career is what has to be looked into. Based on the above analysis the present seafaring career is depicted in Figure 2.16.
Gratification of needs is the main purpose for individuals to work, and purpose of work is to generate economy and in turn work provides reinforcers for the individual. If both are in conjunction then the work performance is increased and worker is satisfied (Dawis, 1996).

2.6 Comparing career at sea with needs

“Career is subjective construction that imposes personal meaning on past memories, present experiences and future aspirations by weaving them into life theme that patterns the individuals work life” (Savickas, 2005). By the end of the formative stage of ones life an individual develops increasing control over one’s own life, acquires competent work habits and attitudes, convinces self of achievement in school and work and starts becoming concerned about his future (Super, 1990b; Super, Savickas, & Super, 1996). During adolescence (14 to 24
years), individuals start associating occupations with self concepts\textsuperscript{12} (Super, 1955) and look for career options and learning experiences to make a career decision. Environmental conditions and events are important in career decision making and include social, cultural, political, economical, technical, and environmental forces. The family, training experiences, social and financial resources; instrumental and associative learning experiences associating to jobs functions and behaviors; neighborhood and community influences, social experiences, educational systems; number and nature of job with number and training opportunities play an important role in making a career choice.

The steps to career choice may be summarized as

- Awareness about the career
- Association with career
- Mapping of self concepts and needs with the career

A career at sea, like shipping service, is covert. Even though about 90% (Ma, 2007b) of the world trade is through shipping still people in the hinterland do not know about ships and shipping. This is true not only for developing countries but also for developed countries. In spite of a two year MNTB\textsuperscript{13} advertisement campaign, students in various schools in the UK were not aware of what merchant navy careers, except the ones who had family connections at sea (Middleton, 2001). Awareness about career at sea in the past has been through books, adventure novels, celebrities, movies, and radio. and general awareness in society due to word of mouth as more manpower was employed at sea. Today it is mainly by word of mouth. If the student is an information seeker, then he may get it from internet or shipping dailies. Television is not being used for advertising shipping careers.

\textsuperscript{12} Self concept is conceptualising work as manifestation of self hood and later on career development as continuing process of improving the match between the self and situations.

\textsuperscript{13} MNTB Merchant Navy Training Board (UK)
Awareness through word of mouth by seafarers and their families has decreased. When they themselves are not satisfied, why would they recommend the career to someone else? From the responses received, only 50% of the seafarers would recommend a career at sea, the same will apply to their families. Television channels are more interested in covering accidents, pollution, suicides, murders and other sensational negative stories connected to shipping (Grey, 2003). Today when all services are client or service oriented and other jobs are lucrative enough, students would not seek information about seafaring. And why should they when they keep getting negative information from everywhere! Hence, at present there is less awareness about careers at sea in society.

Students will only associate with an occupation if its image is good. Children role play doctor, engineer, airline pilot but not a ship captain. For associating with a career its knowledge is necessary (Mitchell & Krumboltz, 1996). They will get knowledge only when they see a ship master in model roles on television, in movies, in story books or cartoons for children, in society or in family. Today image of shipping is so tarnished that people talk of jail terms, sinking ship, oil pollution, murders and suicide onboard or piracy when they know you come from shipping background, who would like to associate with such careers? It therefore brings us to the importance of mapping of self-concepts for the seafarer.

Mapping of self concepts with a career is the most crucial part of career choosing; presently the excellent economy growth has made the decision of career choice more of a picking up a career rather than mapping skills. The trend is to develop multiple capabilities by education and shifting jobs. Research carried out by Cranfield School of Management on future workplace indicates a clear shift from company worker towards a more flexible, responsive, autonomous and widely skilled professional (Davis & Blass, 2007). Sea career does not fair good in this aspect with no provision of lifelong learning at sea.
A question an individual asks self when choosing a career is will the job fulfill my needs? An ideal job must fulfill the needs of an individual which as per Maslow’s theory\textsuperscript{14} (Dixon, 2006; Maslow, 1987) of hierarchy are physiological, security, social, esteem and self actualization in that order.

### 2.6.1 Physiological needs

These needs are the basis for life and include food, water, air, sex and sleep. They are basic needs and must be maintained in life. Money does not fit into the above, but actually it is a means to these needs. A seafaring career offers good pay packages and is also a major source of attraction (major influencing factor in the responses) hence these needs may be satisfied to some extent. Sleep linked with fatigue has been a topic of concern at sea and is also the reason of attritions. At certain times a combination of minimal manning, sequences of rapid port turnarounds, adverse weather conditions and high levels of traffic may find seafarers working long hours and with insufficient recuperative rest (Smith et al., 2006). One master 50 years of sea experience reports that bridge officers often work for more than 16 hours a day in port and sometimes 24 hrs without sleep (Lloyd, 2006). Fatigue is said to be one of the biggest problems facing the maritime industry and all the research shows that it is endemic (Sea, 2006). Fatigue may have resulted in worsening the mental health of seafarers, claims the North of England P&I Club (Fairplay, 2006). Thus physiological needs of a seafarer may or may not be met.

### 2.6.2 Safety needs

There is a desire for protection from physical danger, economic security and orderly and predictable world and avoidance of pain and physical attacks. Oxford University has found that fishers and merchant seafarers have the most

\textsuperscript{14} The Maslow’s Motivational theory of Needs is sourced from (COM 208, 2006) and (Maslow, 1987)
dangerous jobs in the UK (Oxford, 2002). Generally, seafaring is a contract based job, so he must sail to earn sufficient to cover for his leave, retirement, accident and medical eventualities when on leave. Seafaring demands medical fitness\textsuperscript{15}, on being found unfit due to illness or accident ashore, seafarer does not have any economic security. In some cases the problem is even more acute i.e. when a seafarer dies on board of natural causes; his family may not get anything even though he died on board e.g. the ships covered by a Hong Kong National agreement, only has compensation provision for accidental death or work related illness and, not for natural death\textsuperscript{16} (Canias, 2006).

Research has shown that in few cases the seafarer does not even get paid for the worked time as his ship-owner desserts him on account of financial bankruptcy or otherwise\textsuperscript{17}. ITF reports “Seafarers are among the most exploited and abused groups of workers in the world” (Whitfield, 2007). ITF Seafarers bulletins and the sea have a number of articles in each issue reporting abandonment by the ship-owner, unpaid wages, imprisonment and poor living conditions. This coupled with piracy threats and armed robbery incidents against merchant vessels is issue of physical safety as well.

Seafarer’s rights are enforced through national legal mechanism. IMO has come out with guidelines on financial security in case of abandonment of seafarers, A.930(22)(IMO, 2001a), contractual claims for personal Injury to or death of seafarers, A.931(22) (IMO, 2001b) as well as on fair treatment of seafarers in the event of a maritime accident (IMO, 2005), but implementation of the guidelines is a problem. Hence, a seafarer is working in a dangerous working environment with limited economic or job security to talk about.

\textsuperscript{15} STCW Regulation I/9 and Medical Examination (Seafarers) Convention, 1946 (No. 73), and is also in annex to Merchant Shipping (Minimum Standards) Convention, 1976 (147)

\textsuperscript{16} The cover P & I rules provide is subjected to Collective Bargaining Agreement or Crew articles.(Dixon, 2006)

\textsuperscript{17} Even though Article 3, of International convention on Maritime Liens and Mortgages, 1993 provides maritime lien for such wages but to enforce maritime lien is long process and all seafarers may not be aware of such provisions.
2.6.3 Social needs

This need is to belong to a group (family, neighborhood, clan, company etc), to be accepted, to give and receive love and affection. Separation from family is an accepted fact in seafaring. On multinational crew ships and irregular leave periods combined with less communication and fast life have resulted in seafarer’s social isolation even ashore. It is also reported that even their wives face social isolation (Thomas, 2003). An Indian sailor was sectioned under mental health on becoming mentally disturbed and violent on board (Shiptalk, 2007). Life is worse than prison because one may run away from prison, but at sea where will one run. (Master in Karjalainen, 2004). Furthermore criminalization of seafarers does not help the moral of seafarers.

The company is only concerned with the seafarer when he is on board. The sense of belonging does not exist. With erosion of concept of joint families, raising a family is a difficult task and now some seafarers have reported that getting a life partner is a problem. Seafarers are not normally seen at any conferences or seminars as they have come to believe that their views do not matter, therefore, why bother attending one. If conferences are any yardstick, seafarers have become silent partners in their own destinies. “Yet something is missing from this glossy debate about crew welfare- the seafarer themselves” (“Absent seafarer..." 2007). Thus social needs of a seafarer are not met.

2.6.4 Esteem needs

This need includes aspects such as self confidence, self respect, knowledge and it also includes esteem of others that is need of their respect, recognition, appreciation and status in other’s eyes. The competitive desire to excel is an almost universal trait. Maslow divides these needs into two sets first is the desire for strength, adequacy, mastery and competence, confidence in face of the world, independence and freedom. Second is a desire for reputation or prestige, status,
fame and glory, dominance, recognition, attention, importance, dignity or appreciation. These needs lead to self confidence, worth, strength, adequacy of being useful and necessary in the world.

Human beings have always been hankering for knowledge. The internet facilities have opened the Pandora of resources for learning, and hence the need to gain knowledge is even more, knowledge based society augments even further. Application of knowledge, development of new knowledge and technology is the key to progress of individuals and companies (COM 275, 2006). Knowledge in society is measured by degrees one holds, so far some countries provide graduation and very few countries have a structured post graduation program linking to its degree program (Zade, 2003).

Job satisfaction is related to performance of individuals and Meta-analysis of almost 500 studies by Faragher et al. (2005), indicates very strong relationship between job satisfaction, and both mental and physical health. Effect on mental health specifically on account of burnout, lowered self esteem, anxiety and depression were significantly high. Job performance is directly affected by competence. Ship’s officers do have valid STCW 95 certificate of competence by the syllabus and model courses but teaching facilities in most parts of the world does not make him competent to man high tech sophisticated ships in a highly regulated commercial environment. The result is showing up as increased number of claims. Incompetence and incapability breeds feelings of inferiority and helplessness which results in low self esteem. Some seafarers on board are unhappy and lack drive to learn (learned helplessness) which often leads them to become cynical (Southampton, 2005). The above observation may be summarized by Sampson (2007) words as:

“We have bred a generation of disaffected, disenfranchised and generally glum seafarers, languishing in a “3rd World Occupation” and cast as some form of maritime ‘misfit’.”
Thus it can be fairly concluded that the status of the seafarer in society is fairly low even the seafarers perceive that society regards them at a level of 2.8 on 5 (response to questionnaire). Hence the career at sea records very poor in esteem needs of an individual.

2.6.5 **Self actualization need**

This is the need of an individual to realize his own potential through personal growth and development following his own passion and interests. This is the creative need to search for identity and meaning in life. This is the need one is looking for to establish after the other needs which are more or less gratified. If the sea career does not match the temperament of the seafarer he will leave. As the student does not know about shipping, hence, it is not possible for him to associate self concepts with the career. In conclusion it is reasonable say that when other needs are not fulfilled, the seafarer would rarely reach this stage.

2.7 **Conclusion**

The earlier research and papers, responses received for this study, industry view and a comparison of the career with Maslow’s theory reflects that the industry is heading into acute shortage of well trained and skilled manpower. Today the need is for a seafarer with higher operational competency and academic ability.

Pay scale, foreign travel and adventure at sea still attract youngsters to careers at sea. The problem is the wage differential between shore salaries and salaries at sea has decreased which is making sea career lose out on this option. The job insecurity combined with lack of pension, health, and contingency covers is a matter of concern in sea careers as any individual looking for a lifelong career would desire these needs. With the availability of cheap air travel options the foreign travel is within reach of
middle class families. Thus there is nothing much to attract in the present sea career package. The career option is rife with negative aspects in family separation, isolation, boredom, fatigue, monotony, incompetence, work conditions, dangerous, security, criminalization, stagnancy and sense of belonging. Moreover, the social status and image of the career is poor on lack of positive awareness. At present, career at sea is not a lifelong career as also affirmed by the response of 2.24 on scale of 5 when asked if it was a life long career option. The research clearly brings out that that seafaring is not a career for life even for the Asian youth (over 85% respondents). Of the 145 responses from the cadets only 60% would like to sail longer than 10 years, 37% would sail between 5 to 10 years and 3% are likely to leave within 5 years. The sailing officers are the least satisfied among the three categories of seafarers. The satisfaction level of seafarers increases on shifting ashore. Most seafarers have reasoned better career option ashore for not recommending sea career to the talented youth. Thus a career path leading ashore and preparation for the career ashore in terms of education is the need of the hour.

The status of the career in society is low as per the responses received and the industry reports indicate the image of the industry is poor in society and media. This needs an immediate attention. The shipping industry and sea career lacks positive awareness. “It is the absence of image more than bad image” says Balkin (2006). Actually bad image as well as no image are an issue and both need to be looked into, otherwise these would be major bottlenecks once a career path ashore through the sea career route is established.

So to attract the talented youth and retain trained manpower the first and foremost step is to make the career at sea into a lifelong career option. Then create a positive awareness in society, among youth and in schools at massive scale.

**2.8 Lead Ahead**
The armed forces in most countries could recruit, train and retain the best talent in the country by providing a career path into industries, administrations and organizations after defence career. The forces regularly educated and trained them to develop multiple competencies and skills required for the forces as well as to be employed in the civilian sectors as well. The career options ashore are suggested in the EU green paper and project report on mapping a career path (Southampton, 2005). This transition in fact fulfils the need of the maritime cluster ashore as the seafaring skills and experience is necessary for most of the careers in maritime clusters (Pettit et al., 2005, p. 523). To achieve the above an appropriate education and training model for life long learning is required. The author is of the opinion that if the seafarer is adequately and appropriately educated and trained, he would find his way through not only in maritime industries but also in other disciplines.

Thus it can be further concluded that higher education for seafarers is a must in order to prepare them for a life long career ashore. However, the wastage rate may increase and the attrition age may come down, but then if the volume of input increases, the numbers available at a given time in the industry will increase. Higher education is not only the need of the seafarers, but also of the shipping industry and the maritime cluster. At present, times it is the brain that matters not the brawn.
Chapter 3 Seafarer Empowerment Model

In the previous chapter it was concluded that the solution to the manpower problem is to provide transition route to a career ashore. To facilitate easy transition the provision of higher education appropriate to the industry requirements ashore is needed. Spreading positive awareness about the sea career and shipping in society is required so that the talented youth can associate with the seafaring since adolescence.

Different routes available to seafarers for employment ashore in maritime clusters is outlined in ‘Maritime Industries Career Path Mapping’ study by Barnet et al. (2006) (Appendix-H). The METNET project (Zade, 2003) outlined the 4E concept shown in Figure 3.1.

![Figure 3.1: METNET 4E Concept](source)

Career mapping and making a structure showing the path to achieve higher qualification is only good on paper until the program is financed. Higher education is expensive, especially when it is full time. As for a seafarer working on contract basis, studying and paying for education, would be a double loss i.e. is paying and not earning. This acts as a barrier to his further education and career growth. Laubstein (2007) proposes a professional career path integrating seafaring with on shore employment. At mid career it proposes post graduation program appropriate to the requirement of concerned organisation that funds his education and transition ashore.
The funding and transition ashore is to be assured by binding commitment between the seafarer and the organisation at the beginning of the career (Laubstein, 2007), Figure 3.2.

<table>
<thead>
<tr>
<th>AGE</th>
<th>6</th>
<th>18</th>
<th>33</th>
<th>40</th>
<th>65</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Primary &amp; Secondary</td>
<td>Vocational (Cadets)</td>
<td>B.Sc. in Nautical science or Marine Engineering (4 Yrs.)</td>
<td>M.Sc./ MBA Maritime Affairs (2 Years)</td>
<td>Commitment</td>
</tr>
<tr>
<td>Funding</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Employment</td>
<td>Seafaring</td>
<td></td>
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<td>Retirement</td>
</tr>
</tbody>
</table>

**Figure 3.2: The maritime Professional Education and Career Progression.**
Source: Adapted by the author from (Laubstein, 2007)

The proposed financing and education arrangement may be possible in OECD countries or EU countries with impetus from Commission of the European communities, CEC (COM 275, 2006). For the seafarers from other than OECD countries constituting 63.6% of the total\(^\text{18}\), to provide such funding would be a big ask. To make commitment on both sides about 15 years ahead, in the changing capitalistic world probably would be another hindrance to the proposal.

Author opined that providing appropriate education to an individual facilitates him but does not create the required awareness. The present manpower situation demands a comprehensive solution that would not only create a career path but also awareness. A Seafarer Empowerment Model (SEM) is proposed that uses integrated education concept to facilitate the empowerment process. The stages of empowerment process

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\(^{18}\) OECD countries 36.4%, eastern Europe 15.2%, Africa/latin America 8.7%, Far east 31.7% and 7.9% from Indian subcontinent, (Bimco /ISF, manpower 2005 update pp6)
as suggested by Hur (2006) are existence of disadvantage, conscientizing, mobilizing, and maximizing. So far the process has been used by companies & organisations to motivate their employees or it has been used for the empowerment of the oppressed individuals (women, poor) or for empowerment of community. “Empowerment refers to the expansion in people’s ability to make strategic life choices in a context where this ability was previously denied to them” (Kabeer, 2004, p. 19). In this study the empowerment process is used in solving the maritime manpower issue. The main objectives of the model are to empower him for transition ashore to make a lifelong career, and to create a mass positive awareness through networking, collaborating and by permeating into horizontal and vertical layers of society.

Before proceeding further, a clarification is sought to what is empowerment and how will using the empowerment process concept in SEM, help attracting the talented youth to the profession of seafaring?

### 3.1 Empowerment and Empowerment process

Empowerment is a complex word used in many disciplines such as community psychology, management, political theory, social work, education, women studies, and sociology (Ackers et al., 2002). According to Bailey (cited in (cited in Page & Czuba, 1999), definition of empowerment depends upon the specific people and context involved. Kabeer (2004, p. 8) tabled 33 definitions that are currently in use. (Leach and wall, 2007) write that it is also seen as a means of establishing democratic rights. The focus of this study is psychological empowerment that is to attain self determination, self sufficiency and decision making abilities by goal setting, gathering information, defining needs, implementing decisions (Becker et al., 2004, p. 338) then sharing and networking to bring about change. The other aspects of empowerment are not discussed. Chamberlin (1997) stated empowerment as multidimensional and dynamic, so it can be described as a process rather than an
event. Hur (2006) synthesized the process consisting of four components, in five stages and at two levels (Figure 3.3).

The components meaning, competence, self determination and impact have been found to contribute to an overall “gestalt” of empowerment (Spreitzer et al., 1997). The process stages are existence, conscientizing (appropriate education), mobilizing, maximizing (networking) and creating new order (mass integration and awareness). The levels of empowerment are individual and community. These elements have to be powered as they relate to effectiveness, satisfaction and strain (Spreitzer et al., 1997).

Meaning, or purpose, is correspondence between work role and self concepts. Competence, or self-efficacy, is a belief that one possesses the skills and abilities necessary to perform a job or task well (Gist, 1987 p. 472). Self-determination is the belief that one has autonomy or control over how one does his or her own work (Deci et al, 1985; cited in (spreitzer et al., 1997)). Impact is the effect one thinks he made on strategic, administrative, or operating outcomes at work (Ashforth, 1989, 19).

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19 A research method to systematically and statistically combine the finding of several previous studies.
cited in (Hur, 2006). Where as the stages is assessment of existence of disadvantages, appropriate education to remove the disadvantage component, then associating in the community or at work, after that forming a network amongst the community and then changing the order.

### 3.2 Relevance of the process to seafarers

In this context empowerment is to build academic and operational competencies that enhance seafarer’s mobility and allow him to permeate vertically and horizontally into society. Seafarer is the agency of empowerment and education is the resource (Ackers, Lincoln, Travers, & Wilkinson, 2002). Thus the process of empowerment helps develop multiple competencies and spread awareness. Seafarer is the agency of the process and education is the resource (Kabeer, 2004). The empowerment model is further modified in Figure 3.4.

![Figure 3.4: Empowerment procedure for seafarers.](source: Adapted from Hur, M. H. Journal of Community Psychology 34 (5), 2006)

#### 3.2.1 Existence of disadvantage

At this step the disadvantages are established and the disadvantaged discovers the reality i.e. how is he disadvantaged, alienated or suppressed or short of knowledge.

“To be empowered one must be disempowered, i.e. to say one does not have freedom or ability to make choices” (Mosedale, 2003).
At present the seafarer is not able to make career choices ashore because he is not appropriately educated. Everyone has some rights, if the rights are not effectively addressed or they are disadvantaged or suppressed, then there is need to empower them. Present contractual terms and conditions, his educational background, irregular time on land and high fees hinders his higher education plans. Thus it can be said that in the present scenario, the environment is not conducive to his lifelong learning. Hence his rights of further training and education to provide for skill development and portable competencies in order to secure and retain decent work are not respected (ILC, 1999). As seafarers work on contract hence have little chance to develop their capabilities, and employers do not invest in their continuous learning. This makes them at a disadvantage even more, as workers without access to knowledge and skills are left even further behind (ILC, 1999). The Maritime Labour Convention 2006 (MLC 2006) requires member states to have national policies that encourage career and skill development and employment opportunities for seafarers, in order to provide the maritime sector with a stable and competent workforce. Once in force it will bring a change for the seafarers but when?????

Isolation from society, regulators and facilitators of the shipping trade also make them disadvantaged. International chamber of shipping report (2000) states “Physical abuses include beatings and sexual assault, inadequate medical treatment, sub-standard accommodation, and inadequate food. Mental abuse arises from isolation, cultural insensitivity and a lack of amenities for social interaction”(ICS, 2000).

Away from land, separated from family, sailing on ships with fast port turnaround and in company of smaller crews with mixed nationalities on board is the story of his social loneliness and isolation on board (Muirhead, 2001). Seafarers are not only isolated on board but also ashore. They depend on their families for social connections, who also suffer stigmatization and social isolation, (Kahveci et al.,

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20 The present survey reports increased confinement on vessel over last 10 years when compared with earlier report. (London P&I, 2007)
Criminalisation of seafarers is more common, imprisonment of masters of ERIKA and PRESTIGE in Europe, of the master and crew of the TASMAN SPIRIT in Pakistan and conviction of manslaughter of master of Zim Mexico III in USA provide sufficient evidence of this. Denial of shore leave\textsuperscript{21}, unfair treatment of seafarers and undue harassment of seafarers are some of other violation of basic human rights and dignity. Seafarers are being treated as “serious criminals before their guilt has been established” (Mukherjee, 2006).

The seafarers are not only socially isolated but also isolated from regulators. The IMO committees and conferences keep regularly churning out regulations without giving required attention to the realistic manning levels, user training needs or technical efficiency and end-user utility of the systems. After about 30 years of use of an approved oily bilge water separator it was concluded that it is “not fit for purpose” and is reportedly resulting in unsatisfactory compliance with MARPOL regulations (BIMCO, 2006; Hemmen, 2005). Is it not an irony of the system? Is it not mental abuse of the seafarer on account of killing his self conscience of showing regulatory compliance, when technically not possible? And the story is no different when national regulations are concerned. North of England P & I club Managing director Eccleston, R (2007) very aptly says:

“Ill conceived local regulations pour from the rule making machinery of the European Union, the US, China and elsewhere and because these furious regulators do not understand shipping, they don’t understand implications of what it is they are doing, they are putting the marine transport system at risk of running aground”. (Lloyd's List, 2007July 27)

\textsuperscript{21} This aspect however has been addressed in the Maritime Labour Convention, 2006, which codifies in law the right of a seafarer to shore leave. The Convention however has not yet entered into force.
Seafarer is also isolated from shipbuilders and equipment manufacturers who have only recently started talking of human factors (B. Grey, 2007). Then the seafarers also get sidelined from institutions of higher learning on account of non possession of a graduation degree or lack of executive experience!

Even though it may be regarded as high paying job but considering the skills required, dangers involved (Oxford, 2002), mental and physical endurance required, the sacrifices of social and family life and adjustment he has to make, the economic security, social environment that he rightfully deserves is generally denied to him.

The regulations have given the master overriding authority\textsuperscript{22} but the shipboard working environment is different today, where it is more of management from ashore than management on board. Master’s action is questioned even in times of peril by shore-side interests, who being remote from the action, perhaps fail to understand the extreme peril of such a situation ("Getting off faster", 2004, July 23). “Substantial erosion of master’s ‘apparent authority and prestige’ and excessive detailed and difficult to understand instructions from shore is common” General helplessness of the seafarers on account of external pressure is attributable to the fact that a large number of seafarers are working “under what can best be described as casual labour conditions” (B. Grey, 2007). A sailing master of nearly 50 years of experience at sea with 35 years in command summarises the present condition of seafarer.

“The sterile conditions prevailing on many ships, with crews of mixed nationalities often existing in a system of voluntary apartheid, poor pay and conditions and a shore side personnel department that is purely a hiring firing agency all contributes to a general indifferent attitude and poor morale.”(Cooper, 2006)

\textsuperscript{22} ISM code article 5.2, SOLAS chapter V Regulation
At present all concerned are either showing helplessness or are not interested in the state of affairs of the seafarer whether they are governments, charterers, insurers, unions, associations, professional bodies, (Lloyd, 2006) ship managers, and ship owners. They have left it to the dynamics of capitalism and bureaucratic diplomacy. From the above discussion it may be reasonably concluded that the situation needs to be changed to “seafarer centric” and this can be achieved by his empowerment.

3.2.1.1 The skill requirement
The shipping industry is becoming more and more sophisticated and specialised with increased automation in shipboard operations and control. The technology is developing faster than the regulations and training modules (Lloyd, 2006). There is increasingly more complexity in modern engines with more electronics, electro-hydraulic systems and automation (Macdonald, 2001). These ships demand different skills for trouble shooting and diagnosis. MAIB report on Savanah Express accident found that due to inadequate training STCW competent officers were not able to diagnose the fault in the stern propulsion system, which was contributory factor leading to accident (Nakazawa, 2007).

Modern ships are equipped with integrated bridge systems (IBS) and in future will have e-navigation systems (MER, 2007, p. 20). “Human operators rarely understand all the functions of automated systems, because system weaknesses and limitations can remain hidden from the operator” (Patraiko, 2007). Monotony, boredom and temptation to explore beyond need thereby neglecting main function of watch-keeping are additional issues. The integrated system provides all the data at one place and in a difficult situation master would need to critically analyse the data and make decisions. Thus there is regular need for education.

Swedish club reports cargo claims (43%) and is the highest component of P & I claims (Rawley et al., 2006). Regulations concerning shipboard operations, safety, security, environment protection are amended more frequently due to innovation and

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23 MAIB: Marine Accident Investigating Bureau
accidents. The trend in these regulations is more towards subjective or probabilistic or goal based as compared to the earlier deterministic or prescriptive rules. These regulations demand higher understanding from seafarers.

Fatigue and stress management is the need of the day. Handling multinational and multi cultural crew require better human resource management skills. Rawley (Horck, 2007), found by analysing accident data that on grouping the root causes, management group and situation awareness group root causes led to 24.5% and 27.5% of accidents respectively. Fan Cun & Wei (2002) cited in Manuel (2005) were of the opinion that in order to meet the trends of modern ships and increased emphasis on management and professionalism – seafarers have to:

- be competent in operating new ship-based technology, safety management systems and computers
- adept in communication/language, leadership, management, human relationships
- have professional qualities such as career commitment, professional ethics.

Manuel (2006) added the inherent desire for self improvement to keep pace with the dynamism of the economical, technological and regulatory aspects of the industry to the list.

Self development theory acknowledges that the environmental factors and circumstances have an impact on intrinsic motivation. The social environment can either encourage or hinder the natural tendencies towards active engagement and psychological growth.

From the above it may be concluded that the required job skills do not match with competence of seafarers. The gap results in lack of confidence and self efficacy elements of empowerment. Although, social environment of a seafarer is a field of study in itself, which is not the objective of this study., however, from the limited research conducted for this study, it can be reasonably concluded that an integrated life long learning environment, if created for a seafarer can go a long way in ensuring
that the seafarer finds the career of mercantile marine not only sustainable, but also fruitful and satisfying a is to be created for the seafarer.

Hence an integrated life long learning environment is required for the seafarer. Not just Europe but the whole world is becoming a ‘knowledge society’, (2005), it is suggested here need to be empowered both from a social aspect as well as an educational perspective.

3.2.2 Conscientizing (step2)
Conscientizing is providing information, education and knowledge necessary to remove the barriers of choice. The barriers based on above discussion are:

- Lack of adequate skills and lifelong learning environment
- Recognition and image in society
- Isolation at sea and isolation ashore

These barriers may be reduced by providing appropriate higher education in an integrated environment and in a flexible manner thereby opening doors for lifelong learning and multitude of opportunities. The Seafarer Empowerment Model uses the concepts of Integrated Environment, learn while you earn and hybrid learning Figure 3.5.
3.2.2.1 Integrated environment

The maritime industry does not operate in isolation of economical, social and political activities. But the seafarer is educated and trained in an isolated environment of maritime education and training institutes (METI) where only maritime related subjects are being taught. Thus not only is he physically isolated from society but also academically isolated. Also METI do not offer courses to non seafarers. It is required that at least after pre sea training all further maritime education is either provided by a university or college that is offering other streams such as science, social science and humanities or the METI should also offer non maritime streams. The purpose of this integration is that the period of life (18 to 24 years) is the period of establishment (EUA, 2007). With education, development of
social association and friendship is equally important. The socialization process (interaction with peers and faculty) was found to influence the approach to learning\(^{24}\) (Super, Savickas, & Super, 1996). The university environment fosters independent learning, personal growth and maturation. It provides for development of the affective domain of learning as well as broader generic qualities such as global and personal awareness, social issues and motivation for life long learning (Cleveland-Innes & Emes, 2005, p. 257). Thus university provides an integrated learning environment. If to this the integration of the shipping industry and maritime clusters interests are added the learning environment will be in tune with the technology and requirements. Achieving high level of professional competence for the present and future will require a partnership between industry, universities and professional societies if the needs of the European maritime industry are as an example are to be met (CCEMT, 2006).

Figure 3.6: Seafarers training and employment cycle (Present)
Source: Author, 2007

Figure 3.6 shows his isolation where he mainly moves between METI, ship, home and DOT. In contrast, combining MET with other streams in a university will have the advantage that he develops friendships and associations with individuals from other streams of society. This helps in integrating him into society. Permeation of individuals from one stream into another will take place which is very essential for the individual, occupation and society. The individual develops multiple competencies and the occupation becomes visible. Society benefits by having more

\(^{24}\) Surface, Deep and Achievement
talented people at the right place. The major benefit of integration is the vertical permeation of knowledge, experience and individuals that assists in reducing seafarer’s isolation from policy makers, regulators and managers.

The environment will also spread awareness about shipping into other professions and visa versa. Also during this period ship’s officers will be able to associate themselves to a career path they are likely to follow for transition ashore. At present a student, from the time he joins as cadet till he gets his master’s certificate of competency (COC) he is isolated from the main stream and thereafter he gets married and a different life starts where seafarer again remains isolated.

Providing resources is one part and the other is to educate seafarers to better integrate into society. This is integration through actual learning of subjects that give them insight into humanities. Subjects like social science and psychology, shipping finance, shipping economics, management and leadership skills are not only essential for individual integration but are also relevant to the multicultural global shipping world. These subjects will also assist seafarer in better understanding of the human element concepts in shipboard operations. Management programs will assist seafarers to manage better ship operations and positively motivate others in a shipboard environment. These subjects and integrated environment will broaden the horizon and encourage seafarers to venture into other fields such as politics, bureaucracy, legal, financial, economics, management, sociology and media. Thus the concept is of vertical integration into the hierarchy as well as in thinking that will assist in influencing decision and policy making towards improvement of the shipping industry and seafarers. Rasmussen and Svedung created a safety model highlighting stratification of education disciplines and policy decision making process (Murdoch, 2006). With higher education in different disciplines seafarer would be able to represent seafaring profession in all these disciplines. If a seafarer has had a satisfying sea career, he will not hesitate to proudly speak about his seafaring background.
The institutes and the university will also benefit as they will have more number of students from multiple backgrounds bringing richness through their experience and knowledge. It will be possible to do optimum utilisation of resources (sharing faculty, infrastructure, and library). Sharing of faculty and facilities will further enrich the different departments that are sharing resources. Overall fund utilization will be also efficient and effective. From the perspective of promotion of interdisciplinary studies, Kobe University of the Mercantile Marine and Kobe University were integrated on October 1, 2003. At present the percentage of women in shipping is 1-2% (Mejia, 2007); integration improves chances of getting more women into shipping through interaction and better awareness. The path of life long career would also become visible.

3.2.2.2 Learn while you earn

Informal interview with Prof. Nakazawa,T (Faculty, WMU) on 6th Aug 2007.
The purpose of the concept is optimum utilization of the time compulsorily spent by ship’s officers on board ships during their contract periods for the sea time requirement for higher level Certificate of Competency (COC) or as normal employment to earn a living. The concept is saving time spent on education ashore to be able to learn and earn at the same time. During deep sea sailing ship’s officers can easily spare about 2hrs\textsuperscript{26}. This spare time can be used for higher learning which will benefit the seafarer and also the shipping company. Hence this time combined with some contact teaching hours will be used towards higher education. At present funding of higher education is a problem especially in the developing world. In the case of seafarers, mostly they have to fund their own higher education thereby spending lifetime savings.

Today cyberspace education operates without frontiers, walls or barriers and provides interactive learning environment (DCOMM, 2003), the possibility of education through this mode is possible on board. If the seafarer is provided access to higher education programs at sea then he can save time and money. He will be learning as well as earning, thus the education will be time and money efficient. At present he has to spend at least 1 year in college and spend about 21000 Euros\textsuperscript{27} for education and living plus an earning loss of about 30,000 Euros, in the ‘Learn while you Earn model’ e.g. he spends about 4 months in college and it is likely to cost him about 11,400 Euros\textsuperscript{28}. The education at sea will reduce boredom and monotony at sea. It will also result in more effective learning as one can associate knowledge with work and practice where possible.

3.2.2.3 \textit{Hybrid Learning}

The purpose of choosing this method is that seafarer needs flexibility and to make the best use of time when he is at sea and to make the course affordable. For a

\textsuperscript{26} 8hrs of watch keeping, 10hrs rest period, 2hrs maintenance, 2hrs of other activities, 2hrs free time
\textsuperscript{27} Erasmus University PG course tuition fees 11400 Euros + 9600Euros (12*800) living expenses http://www.eur.nl/english/prospective/master/maprogrammes/maprog/maecon/
\textsuperscript{28} 7000 (pro rata for 4 months) + 4000Euros for distance learning (Australian Maritime College DLP)
seafarer class room teaching is required for the purpose of social interaction and
distance learning is required to make optimum use of time at sea. The concept of
hybrid learning integrates the best features of conventional face-to-face (F 2 F)
learning with technology-based online-learning (Muirhead, 2001), it is defined as the
integration of F2F class room lessons with distance learning and/ or e learning
(Rahmani & Daugherty, 2007). There are numerous combinations that are used for
hybrid learning; the model of hybrid learning Figure 3.8 indicates different
combinations that are possible. By turning the circular rings different combinations
can be arrived at e.g. Video clips can be on line which will be asynchronous, self
paced, online and self study. For seafarers it will be work based learning through
distance learning mode. This type of learning is already being delivered to cadets
and trainee engineers prior their first COC. Hence it would be a question of taking
two notches upwards for graduation and post graduation courses.

Thus the elements of meaning and competency are improved through flexible
learning and choice of subject as per seafarers self concepts. The seafarer would
develop competency relevant to the job opportunity ashore which will give better
meaning to his individual, family and social life. Self determination is linked to
competence and with multiple competences he will have options to choose from. SEM is also likely to create an impact on the life of individual as well as the shipping community.

3.2.2.4 Identifying Subject Areas for Empowerment

The purpose of empowerment is to provide life long career by developing multiple skills so that a seafarer easily transits into maritime cluster and beyond. Before spreading the life long career to youth, it is required to know whether there are sufficient numbers of opportunities ashore for seafarers. The seafaring profession described by Grey is worth a mentioning here.

“The seafarer ashore is a valuable employee, educated in a demanding school, accustomed to self discipline and hard work. He is mature, he does not watch the clock, and he possesses drive and initiative.” (Olapiriyakul & Scher, 2006)

Maritime industry career path mapping study by (Grey, 1980, p. viii) reports that the seafarers are especially valued by shore employers for their knowledge of shipping, credibility, leadership potential, independent, self reliant and resourcefulness. An OECD study (Barnett et al., 2006) reports that all respondents confirmed requirement of ex mariners in significant numbers to fill key roles.

This dissertation study indicates that sea service has assisted 82% of the respondents in securing a land based job and the service at sea has assisted 80% of the respondents in doing their jobs.

Gardnera et al (2007) estimated a mean annual demand in UK maritime cluster of about 313 persons with seafaring background against a supply of 201. The same paper estimates that the supply is not going to reach the demand numbers before 2011. The estimate is based on fixed demand, whereas the demand would have
further increased due to high registered growth rate in all sectors whether it is number of ships, ports, shipbuilding or shipping management, hence the demand of ex seafarers in land based jobs exists and will remain for some time. OECD study (PAL, 2003) shows that half of the fleet management staff are former OECD seafarers and is likely to remain constant over next decade. With the growing economy of Asian countries the demand for seafarers ashore is also being felt by these countries as well. The demand for competent seafarers on board ships and the demand for ex seafarers in land-based jobs exist.

Based on previous reports and research papers (PAL, 2003), EU Green paper, the industry statements in shipping journals and some inputs from respondents, subject areas have been identified as given in Figure 3.9.

Improvement is required for all seafarers in the following areas:

- General Management
- Humann Resource Management (multi-cultural issues, fatigue, communication, motivation etc.)
- Information and Communications Technology (Computers)
- Humanities and social sciences
- Automation and control
<table>
<thead>
<tr>
<th>Marine Industry</th>
<th>Additional Essentials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classification societies</td>
<td>Naval Architecture, Marine Engineering, Risk Management, Quality management.</td>
</tr>
<tr>
<td>Surveyors/consultants/survey/inspection</td>
<td>Project management</td>
</tr>
<tr>
<td>Port services</td>
<td>Logistic Management, Safety Management, Crisis Management, Project Management</td>
</tr>
<tr>
<td>VTS</td>
<td>Vessel Traffic management</td>
</tr>
<tr>
<td>Ports</td>
<td>Port management, Multimodal Transport, cargo Handling and management, Business administration</td>
</tr>
<tr>
<td>Maritime administration</td>
<td>Conventions, Maritime policy and Maritime law, Survey, Causality Investigation and Port State control</td>
</tr>
<tr>
<td>Towage/salvage/dredging</td>
<td>Specialised training (equipment, ship handling, Law)</td>
</tr>
<tr>
<td>Legal</td>
<td>Maritime Law</td>
</tr>
<tr>
<td>Insurance/P&amp;I clubs/loss adjusters</td>
<td>Basic and Marine Insurance</td>
</tr>
<tr>
<td>Ship finance</td>
<td>Shipping Finance management</td>
</tr>
<tr>
<td>Ship broking/cargo broking/ship chartering</td>
<td>Ship Management</td>
</tr>
<tr>
<td>Ships agents</td>
<td>Ship Management, Business administration</td>
</tr>
<tr>
<td>Marine equipment</td>
<td>Computer, Automation and controls</td>
</tr>
<tr>
<td>Engineering (shipbuilders/ship breakers/ship repair/engine builders)</td>
<td>Naval architecture, Marine engineering, Metallurgy</td>
</tr>
<tr>
<td>Offshore</td>
<td>DP training, Safety training etc.</td>
</tr>
<tr>
<td>Ship management/crew management</td>
<td>Ship Management</td>
</tr>
<tr>
<td>Marine information technology, Simulation</td>
<td>Computer skills</td>
</tr>
<tr>
<td>Education/training</td>
<td>Teaching Pedagogy and MET Management</td>
</tr>
<tr>
<td>Journalism/publishing/miscellaneous</td>
<td>Course in Journalism</td>
</tr>
</tbody>
</table>

Figure 3.9: Maritime industries ashore and additional job essentials
Source: Author, 2007

The job scenarios and individual requirements are different. The essentials may be grouped into one post graduation program to fulfil the essential need for a number of maritime industries. As an example Figure 3.10 shows subject areas covered by Masters Program at World Maritime University.
### 1st semester (11 weeks, 10 Credits) | 2nd semester (17 weeks, 12 Credits)
--- | ---
Transport Economics | Financial management
Management I | Shipping and Port Management
Maritime Law and International Maritime Conventions | Maritime and Commercial Law
General Ship and Ship Operations Knowledge | Logistics

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### 3rd Semester (18 weeks, 13 Credits) | 4th Semester (18 weeks, 16 Credits)
--- | ---
Shipping and Port Management Systems | Human Resource Management
Shipping Management Strategy | Maritime Project and risk Management
Shipping and Port Marketing | Integrated Transport
Maritime Law and Insurance | Ship Acquisition and Maintenance Management
Ship chartering Sales and Purchase | Implementation of Maritime Conventions & Legislation Development
Integrated studies: ship Management | Maritime Safety Standards
Research Methodology and Study Skills throughout the semesters with Research Project at the end.

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Figure 3.10: Modules for Post Graduation program in Maritime Affairs with specialisation in Shipping Management

Source: Author, 2007

Hence after doing the above mentioned program the seafarer would be suitable for employment in either of Shipping Management Company, Insurance Company, Chartering and Brokering, Bunkering Management, Quality Manager, Ship Superintendent, Ship Surveyor, Consultant, Logistic Management Company, Transport Company and in non maritime industries looking after their transport and shipping requirements.

The programs need not only be on the topics suggested above but can be in social sciences, political science, economics and engineering. Seafarers have very good working attitude as they are used to making independent decisions, working long hours, working under stress, handling crisis, and are very practical. Once empowered with higher education, they would be in demand not only in maritime industries but also in non maritime industries.

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29 Human resource management module (including humanities) will be compulsory for the seafarers.

30 Fourth semester consists of electives different subjects like naval architecture, Teaching Pedagogy etc. may be taken to develop relevant competencies.
3.2.3 Mobilising (Step 3)
Integrated learning environment with flexibility not only provides for increased competence skills but also autonomy of choice to the seafarer as well as relatedness through mentoring and face to face teaching. Autonomy and competence enhance intrinsic motivation. Also the social contexts of supportive autonomy, competence and relatedness have dramatic powers to enhance humans natural tendency towards internalisation and integration of social values and responsibilities (Barnett et al., 2006; PAL, 2003). They also concluded that for commitment, effort and high quality performance supportive social environment is a great motivator. Thus SEM provides for supportive environment that motivates learning seafarers towards higher performance and commitment to bring change. The Hybrid learning environment also brings in element of collaborative learning and environment of collaboration. Hence after education seafarers will be able to practice same in their neighbourhood schools and community. The seafarers thus will form a sort of cluster of persons who are aware about shipping and seafaring. So it is fair to conclude that the education would bring better meaning to seafarer’s life, provide for multiple competencies, and above all give them the driving force of self determination to create an impact in society.

“Industry participants in a recent Symposium at Cardiff University reportedly were spellbound by a presentation of Capt. Syamantak Bhattacharya, a Nippon Ph.D, fellow…….”( Lloyd’s List, July 25, 2007)

The result is likely to bring awareness about seafaring and shipping in society.

3.2.4 Maximizing (Step 4)
During the higher education program the seafarers would form a network with seafarers doing different specialisations as well as with other students and faculty in the university. They would also share information with industry experts during seminars and workshops. When these networking channels are opened the effect gets maximised. The regional level associations and clusters become national and the
national networks become global. This will create mass integration and awareness of sea career in society. The effect will be to make the career visible to the talented youths as well as provide for role models for them to get attracted to seafaring. With the support of university the empowered seafarer community can make the real influence on society.

3.2.5 Creating new order (Step 5)

With ‘operational and academic’ competence the empowered seafarers would not only move horizontally in society but also vertically upwards permeating the stratified layers of discipline. And when these individuals reach policy making and influencing levels across the globe they can definitely create a new order. At that level they will be in a position to empower the seafaring and shipping community by formulating policies that integrate and support the community within society. The process is illustrated in Figure 3.11.

3.3 Conclusion

Thus it can be concluded that the empowerment model is designed to achieve its objectives; Provision for Life long career by developing multiple competencies, change of image and awareness or bringing mass positive awareness about seafaring and shipping by mobilising, maximising and creating new order.
Figure 3-11: Transformation from “Isolation to Integration & Impact” thru the Process of Empowerment

Isolation
Inadequate Skills

Education &
Employment

Integration &
Impact

Source: Author, 2007
Chapter 4 Implementation of SEM

The education provided through SEM should meet the needs of the seafarer, and be in correspondence with requirements of the career paths ashore that he is seeking. For successive implementation of a program it is necessary that a feasibility study is carried out to see the viability and requirements of the program. Then its effective implementation is to be ensured to achieve the objectives. Figure 4.1 outlines the said procedure.

![Diagram of Feasibility and Implementation Plan]

Figure: 4.1. Feasibility and implementation plan
Source: Author, 2007

4.1 Feasibility

Effectiveness of the Model

The model is effective if the desired objectives for which the model is designed are nearly met. The objectives of the model are to provide a life long career option for the seafarer and create positive awareness in society. This should result in attracting the talented youth to the shipping industry and retain him longer at sea. The effectiveness has been checked by analysing the responses to the related questions
with the objectives. The responses also will be analysed with the motivation theories and career choice and development theories where relevant.

On completion of the first part of the questionnaire, respondents were asked to go through the illustration of the model Figure 3.5 and then answer the second part of the questionnaire.

4.1.1 **Lifelong career**

The foremost objective of SEM is to attract talented youth to the industry by providing him a lifelong career. A career may be life long if the worker’s abilities are in correspondence with the ability requirements of the work environment and the worker should be satisfactory for the job and he should be satisfied i.e. work reinforcers should be adequate. The worker’s tenure is positively related to satisfactoriness and satisfaction (Ryan & Deci, 2000). The correspondence shall be maintained on change of the work requirement or on change of the needs. Empowerment of the seafarer through higher education is based on the career paths and recommendation of a mapping career project (Dawis, 1996, p. 90), (Appendix-H). SEM develops his higher analytical skills to keep him satisfactory for the chosen job and adjust to the work requirements. SEM also opens paths to lifelong learning and helps in improving his work attitude through courses in humanities and interaction with society. Thus after implementation of SEM he will be suitable for transition to careers available in the maritime industry ashore. Multiple competencies open up variety of job options for him with life long careers.

His basic needs and security are satisfied by new job, love and belongingness needs through integration with family and society. His higher needs of esteem get satisfied as a result of higher education in the knowledge based society. SEM will provide a number of programs to choose from hence would be able to take up higher education suiting his self concepts and work requirements. Thus he will be able to perform better as he will be able to associate self with work and enjoy his work. Job
satisfaction also improves performance, (Bassy, 2002, p. 23) also an individual’s satisfaction is positively linked to tenure in a job (TWA theory), hence SEM increases retention.

The responses to the questions on improvement of academic and professional competence have been highly encouraging. Almost 90% of the respondents perceive that SEM would be able to empower them academically and professionally (Figure 4.2) so it can be said that his work skill satisfactoriness is likely to increase after empowerment. Data shows an 86% increase in social empowerment factor which reflects a change in his status in society which is linked to esteem and ego. So he is likely to be satisfied with self, and job increasing his work tenure (TWA theory). The professional, academic, and social factors contribute to stability, and hence making a career life long.

![Figure 4.2 Effect of SEM on Academic, Professional, and Social aspects of Seafarer](image)

Source: Author, 2007

As per the responses, 90.4% of the respondents perceive that their job performance on board and ashore is likely to improve. 89% of the respondents also perceive they will be able to get more and better jobs. Data show improvement in his job performing ability but for getting the job, availability or seafarer demand is necessary. Gardener et al. (2006) reports that employers in the maritime cluster need ex
seafarers for filling up about 62.4% of job positions, and this is without higher education. EU green paper emphasised the need of a steady flow of former seafarers is required in many sectors like port state control authorities, classification societies, pilots, engineers, shipyard managers, safety inspectors and instructors (2005). There is shortage of trained professionals in field of supply chains in maritime sector (COM 275, 2006; Grewal & Haugstetter, 2007) and management field of international trade policy. Kerr (2007, p.1) says it is “widespread in developed countries and is endemic in developing countries”. The author is aware of seafarers with MBA degrees working as managers in multinational companies like Cargill, Reliance, Mittal Steel, Tata Logistics, Blue star, and a few even working as bureaucrats. 6 percent of the respondents on completion of higher education are working ashore in non maritime sectors, such as software firms, steel industry, business school and advertisement and media. 90% of respondents perceive that higher education is likely to open more and better job opportunities ashore.

From the above discussion it is fair to conclude that SEM will help in providing a lifelong career option through the sea career path to the seafarers.

4.1.2 Awareness of sea career

Isolation and alienation of seafarer is multidimensional; academic, regulatory, social. SEM has proposed vertical integration of the seafarer. Adopting conventions is one part; however the important part is the ratification and implementation of the conventions. Few ILO Conventions31 related with seafarers welfare never came in force or have been ratified by very few countries, even after ratification a convention may not be enforceable (Donner, 2007; Fitzpatrick & Anderson, 2005, p. 80). With higher education a seafarer will be able to influence a change in polices for welfare

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31 C93 & C103 Wages, hours of work and Manning, never came in force. C163, C166, C180 related with seaman’s welfare, Repatriation and hours of work has been ratified by very few ratifications
of seafarers. When serving on board, with improved knowledge of regulations and rights, he will be able to better address injustice.

Separation from the family will be mitigated by shifting ashore. Higher education may provide competence to enable rotation arrangement between ship jobs and land based job. In the era of digital communication maintaining continuity between the jobs would not be a problem. It is said that books are a man’s best friend. The books for higher education at sea will help reduce monotony, boredom and isolation in addition to providing knowledge and qualification.

Social isolation will be reduced to a large extent by his integration in the main stream. Provision of humanities in the syllabus reduces the self stigma of isolation and improvement of self concepts thus he will take initiative to mix. More number of seafarers ashore will lead to better networking.

82% of the respondents think that SEM will be able to integrate the seafarer better into society and 87.7% of them think that they will socially benefit from implementation of SEM.

Figure 4.3: Image of seafarer and shipping in society
Source: Author, 2007
The image of careers at sea is at its ebb as a result of disasters one after the other and amplification of there consequences by the media (Hebbar, 2006). SEM can change
this image through increased representation in society after empowerment and making a network of seafarers ashore holding cross disciplinary seminars and conferences. He will be able to do that more often, because he will have more self confidence and will be able to co-relate shipping with other concerns. Figure 4.3 shows the perceived effect of SEM on the image of seafarer and effect on his integration in society. It also shows the likely change of image of the seafaring career and shipping industry after implementation of SEM. The resultant perceived change in image of seafaring and shipping is above 82% which is a considerable perceived improvement. Hence SEM is likely to help in better integration of seafarers, and improvement in their status. It will also help improve the image of seafaring and shipping.

Awareness is linked to image and integration. The integration concept of SEM is the major element in spreading positive awareness about the career at sea in society. A satisfied seafarer attending social functions, seminars and conferences, and school functions would be able to spread awareness about seafaring and shipping. Marketing of seafaring careers can be best done by seafarer, by giving presentation about career at sea to eighth, ninth grade students in hometown schools. Once he is in the academic circles, the urge to write few articles would automatically generate creativity in him. The above processes are linked to higher learning, integration, land based job and job satisfaction. Thus SEM is likely to create an environment where seafarers will be spreading awareness of careers at sea among the students.

An Informal interview with four WMU students working in an integrated university environment of (Arab Academy for Science, Technology and Maritime Transport (AASTMT) and Shanghai Maritime University (SMU) confirmed that awareness among the students and society increases when METI is integrated with non

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32Ms. Sandra Sami George Haddad, Mr. Tarek Mohamed Mahmoud Gamil & Mr Mohamed Ahmed Mahmoud Essallamy of Arab Academy for Science, Technology and Maritime Transport (AASTMT) and Ms. Yu of Shanghai Maritime University
maritime disciplines. The social interaction among the students of different streams is prevalent. The interaction takes place in the cafeteria, functions, and sports activities and at graduation or university fests. In SMU students of different streams also had some common lectures. At AASTMT faculty sharing between departments was reported to be limited. However in SMU sharing of faculty between departments was said to be more. In both the universities few seafarers took higher education in non maritime disciplines. However in SMU change of stream from marine to non marine and vice versa was also said to exist. Thus, it may be concluded that the integrated learning environment assists in increased social interaction and awareness. The optimum utility of the integrated environment is possible if inter discipline academic, cultural, co curricular activities are organised.

4.1.3 Promoting career at sea

The seafarer appears to be more satisfied with his career at sea after the perceived implementation of SEM. The data collected shows that an increased percentage of seafarers are likely to recommend career at sea to their sons, brothers daughters and friends. The percentage of recommendations has more than doubled to 62% from 30%. The data also shows that the percentage of seafarers who will recommend seafaring to the talented youth has also increased from 50% to 85 %, a marked improvement. Over 83% respondents think that after the change, more number of talented youth will be attracted to seafaring careers. Hence it is very encouraging to conclude that the implementation of SEM is likely to attract more number of talented youth to seafaring careers.

4.1.4 Retention

Retention of employees is a problem not only in shipping but also in other professions. In shipping, companies and administrations have been trying short cuts to retain seafarers to shipping, e.g. by not providing higher education “Why do you want to educate seamen? They will only leave the sea” was quoted by an official of the Shipping Federation (Grey, 1980, p. vii). Such strategy would not last long if the
career in offer is not life long and does not have adequate development opportunities. All motivational theories suggest that for an individual to continue in a job there has to be some motivation. In seafaring once a seafarer reaches the rank of master or chief engineer, he is not interested to continue sailing as there is no further motivation. SEM provides motivation through learning and earning at the same time. “At present young seafarers wanting to step ashore spend most of their savings on higher education” (Laubstein, 2007).

The younger generation is shifting ashore even before marriage to complete higher education and settle ashore before marriage. This has brought down the attrition age to 27 as analysed in this study. SEM will increase attrition age by providing the necessary education at sea. If he learns while he earns why will he quit sailing? Some may find continuing education and research at sea more interesting hence may continue sailing longer than planned.

83% of the respondents feel that seafarers will sail longer if they are provided higher education at sea. To double check on the longevity of sea service the question was repeated in different forms as How long will you sail in present circumstances? And how long will you sail after change of scenario. The responses show that 71% of them will sail longer after change of scenario. By taking mean values of the categories, the average sea time increases to 6.9 years from 4.8 years, nearly 42% increase is evidenced.
<table>
<thead>
<tr>
<th>% change</th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 4-5: Perceived change in active sea time**
Source: Author, 2007

### 4.1.5 Other benefits

The higher education through SEM will enrich the total knowledge base that benefits all, individuals, the shipping industry and the maritime cluster and it also contributes to the economic development of a nation (Grewal & Haugstetter, 2007).

#### 4.1.5.1 Ship owner and shipping Industry

The performance of the seafarers will improve because they will be more motivated and satisfied. Tenure with the company will increase. It is likely that they will be able to take better decision because they will have better analytical skills required in the technologically advanced industry, Singh, (2003) in his exploratory study concluded that situational awareness and analytical skills of even experienced seafarers were weak (Singh, 2003, p. 48). Feedback provided ashore on issues will be precise and to the point. It is likely that they will be able to perform some data analysis for the company on board or ashore to achieve better efficiency. The image of the industry is likely to improve.
4.1.5.2 Universities and Education Institutes

The seafarers will be able to do research activities on board ships and ashore, thus enriching the knowledgebase of the university. Credentials of the university will improve on account of cross disciplinary resources. It is likely to generate funds for the university. The goal of universities to provide higher education and research facilities that increases technological innovation and advances on principles that benefit environment, economics and society can be achieved.

4.1.5.3 Maritime clusters

A steady flow of ex-seafarers with better skills and knowledge to the maritime cluster would reduce the skilled manpower shortage of the cluster. They will be able to provide for technology that will be user friendly (Grey, 2007a).

4.1.5.4 Society

A satisfied percentage of people contribute towards a better society. The preventive cost of safety and environment protection will increase, but the failure costs and losses are likely to decrease, “quality is not free but it pays back” (Ma, 2007a, p. 136). The cost of transportation to the consumer is also likely to reduce. The above discussion clearly shows that SEM is not only likely to achieve its projected objectives of attracting talented youth and increase attrition age, but will also enhance the performance of seafarers on board ship and ashore.

4.1.6 Demand

For a program to be economically viable there must be demand for the course. To assess same the seafarers were asked the question whether a post graduation program for seafarers at sea should be provided or not. 92% of seafarers felt a strong need for the course. Their comments on the model (Appendix-F) reflect great desire and urgency for the program. More than 92% of the respondents who wrote comments about the model indicate a strong desire for higher education and agree with the
concept. The responses not only reflect demand but also urgency. Hence the program would be economically viable.

4.1.7 Infrastructure

As the program will be conducted using the hybrid learning concept, the requirements for land, building and classroom requirements would not be high i.e. capital costs will be low. The distance learning component of the model may be delivered by different methods (Appendix-N). If the distance learning component is delivered using a web based platform then it requires computers, broadband internet connectivity, software programs and digital course materials. The cost of designing the digital courseware will be expensive and there will be recurring operating costs as well. So it will need a high operating cost if the course is to be delivered on line. However to begin with it is possible to commence the program through conventional distance learning or combining conventional distance learning with email. So the course does not require very high infrastructure costs to begin with.

4.1.8 Faculty

Skills and competence of faculty members is crucial to deliver quality education at any level and by whatever mode. The faculty for developing and delivery of Web based distance learning programs require specialist skills (computer and academic) (Fisher & Muirhead, 2005). The human resource possessing such skills are not easily available (Muirhead, 2003).

4.1.9 Recognition

Recognition of the program is one of the main requirements, as the seafarer is in need of a recognised qualification that would help him get a job ashore. Also in the knowledge based society status is based on qualification one holds. So the credentials
of the university recognising the program are very important. The universities already offering courses would not have any problem in offering and recognising the course. The distance learning qualifications do not have same reputation in the employment circle. Therefore it is essential that the program has credentials of a good university. A course developed by World Maritime University (WMU) or International Association of Maritime University (IAMU) and delivered by METI approved by them may be a good option to give global recognition.

4.1.10 Feasibility Study Conclusion

The discussion on the feasibility study of the education program through SEM reflects achievement of its objectives and it also provides a number of additional benefits. SEM is socially and commercially and viable proposition.

4.2 Implementation

4.2.1 Integrated Learning Environment

The main objective of integrated learning environment is to create a learning environment where the seafaring students interact with students of non maritime streams and the specialisation of the non maritime stream is available to the seafaring students. So there is a physical integration factor and an academic integration factor. To provide such an integrated environment one of the following methods may be used.

1. METI getting affiliated to a non Maritime College or University. E.g. Indira Gandhi National Open University (IGNOU), India, a non maritime university offers three year B.Sc. Nautical Science program through a METI. An IGNOU approved METI provides the face to face training as per the course curriculum and distance learning program is provided for by IGNOU.

2. METI integrating into non maritime university. E.g. Warsash Maritime Academy is owned by Southampton Solent University33.

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33 http://www.warsashacademy.co.uk/about-us.asp
3. Maritime universities offering other streams such as Social Science, Economics and Management. E.g. Shanghai Maritime University and Dalian Maritime University.

4. Maritime universities collaborating with non maritime College or non Maritime University. E.g. Arab Academy for science and technology and Maritime Transport (AASTMT) has also collaborated with University of Sunderland (United Kingdom) to offer courses in computer science.

5. Establishing a new integrated university or an existing Integrated University to offer courses using hybrid learning modes. E.g. AASTMT is offering courses in maritime, management and engineering streams through its colleges.

There are few universities that provide integrated learning environment and are offering higher education programs but none of them is offering courses through hybrid learning mode to seafarers. So it is feasible for these universities to provide courses as proposed by SEM.

The ideal SEM implementation is possible by providing a total integrated learning environment (Figure 4.6). It provides for multiple disciplinary educations to cater for policy makers, regulators, managers and operators. Ideally the education is provided within the same campus or vicinity. The maritime cluster and other industry also provides faculty and research support to the METI. The education and career development is provided in collaboration with the maritime cluster, non maritime industries and facilitators, society and government. Governments should make a long term policy in support of the environment to facilitate easy and uniform implementation. The model may be implemented at global level by expanding the charter of WMU or by IAMU with collaboration by the key maritime players.

Such integration is possible by building support or network around the existing university or METI. Once an infrastructure is ready, there is need to design the program to detail.
Shipping is truly global as officers hailing from different backgrounds interact in the common work environment at sea. The human resources of maritime clusters also interact globally e.g. brokers, bunker suppliers, traders, agents, managers and surveyors to facilitate sea trade. In such an environment, it is necessary that the operators are on the similar competency and knowledge level. STCW-95 created a global minimum competency standard level that allows mobility to seafarers to some extent. A similar global program structure for higher education of seafarers is required that will provide for mobility and global recognition. The program needs to be flexible. The program should accredit the seafarer’s prior learning; based on his level of certificate of competency and then build on his knowledge.
4.2.3 *Credit based Module system*

Module system based on credits is ideally suited for development of multiple competencies and qualification required in multidisciplinary maritime cluster. The system allows flexibility, mobility, recognition of prior learning (RPL) and supports life long learning at individuals learning pace. The credit system also allows work based learning (WBL). The transfer and accumulation of credits is possible across different learning methods, disciplines and between universities.

The ‘European Credit transfer system’ (ECTS) has been used by about 75% of the EU universities providing higher learning (EUA, 2003). ECTS is adopted to meet the objective mobility and recognition (Dowling, 2007). “Credit helps to make learning flexible, adaptable, valued, accessible, tailor-made, quality driven and market led”(QAA, 2001)

Thus credit system is ideally suited to the requirements of seafarers and the shipping industry. STCW\(^{34}\) competence tables clearly define the learning objectives and levels as operation and management. The competence table together with teaching hours assigned in the IMO model courses\(^ {35}\) can be compared to the credit level descriptors (QAA, 2001) and ECTS (Appendix- I). Based on the calculation 75 credits of learning is required by a seafarer holding management level COC for post graduation degree and 30 credits of learning is required for operator level COC to get a bachelor’s degree.

All operational level COC holders need to do the bridging semesters on completion of which they are to be awarded bachelor’s degree in maritime affairs. The bridging course is 30 credit module to cover human resource Management, General Management principles, social sciences and another non credit compulsory module on research methodologies and writing, spread over one year. And thereafter 60

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\(^{34}\) STCW Code Table A- II/1  
\(^{35}\) IMO model course for deck officers
credits spread in 3 semesters of 6 months each are proposed to be completed by the management level COC for award of PG degree. The program is linked to management level COC i.e. he must have his COC for getting his PG through this system. The compulsory sea time and COC is linked for increasing retention time.

4.2.4 Program Development

There are multiple entry paths\textsuperscript{36} to seafaring and there are multiple disciplinary jobs available ashore demanding different skills. Developing and designing courses to map different options in different countries is a vast topic by itself and is not covered in this study. A list of possible programs is given in Figure 3.9 of the previous chapter. When designing SEM programs, the following points should be considered.

The integration concept shall also be applied when developing course curricula to account for psychomotor skills, the cognitive domain and the affective domain. Affective domain is important as the attitude and values required for a job ashore are slightly different than what is required on board ship e.g. the ship has hierarchical structured organization whereas ashore it is more a horizontal structure. Modules on humanities,\textsuperscript{37} basic management, automation and computers should be mandatory as research has shown weaknesses and work requirements in these areas (Manuel, 2005; Rawley, 2006), (Barnett et al., 2006, p. 140),(Mathews, 2004) ("Addressing automation..." "Addressing automation", 2007)

The provision of specialization in non marine streams is required for vertical integration of seafarers to change the image of the career in society and to enrich the maritime industry with insight on maritime issues from different angles. “Scientific problems tend to go beyond traditional disciplinary structures: cutting-edge research

\textsuperscript{36} E.g. UK has Graduate, Undergraduate, Officer cadet, Marine apprenticeship and marine traineeship for deck officer (MNTB, UK, www.gotosea.org)
\textsuperscript{37} IIT Delhi, a premier engineering institute in India has 50% of syllabus from cross disciplines and 8% on humanities. http://www.iitd.ac.in/prospectus/Prospectus2007-08.pdf
is increasingly being conducted at the interface between academic disciplines or in multidisciplinary settings.” (COM 208, 2006)

The F2F component of the program should be used to develop higher cognitive skills and affective skills. It should include group tasks like group discussions, seminars, projects, presentations, role play, brainstorming and, case studies. The new developments in the respective field should be covered. This component is important for developing a network of highly professional mariners to make an impact in society.

An example of a SEM program is given in (Appendix- L).

### 4.3 Mode of delivery

SEM uses the concept of hybrid learning that provides quality, mobility, flexibility and ‘time and cost’ efficiency with life long learning. For effective implementation of hybrid learning the credit based module system is to be used. One part of the program is to be delivered on board ship through the distance learning mode and the other part in the university or METI. To achieve desired efficiency in ‘cost and time’, ‘learn while you earn’ concept is most suitable. The basis of the concept lies in providing education to the seafarers at sea.

During deep sea sailing ship’s officers can easily spare about 2 hours that may be used for distance learning. The Shipboard Structured Training Program (SSTP), a distance learning module for cadets is already in use. The SSTP is hybrid learning programs as there are both F2F and distance learning components. Since the SSTP is being delivered on board, the DLP component of SEM learning can also be delivered on board. An example program is outlined in (Appendix-L)

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38 F2F face to face teaching, class room teaching-learning activity
39 8hrs of watch keeping, 10hrs rest period, 2hrs maintenance, 2hrs of other activities, 2hrs free time
The mode of delivery of the program and content are important to achieve learning objectives. Traditional DLP using print media provides static learning materials in an isolated learning environment at one extreme. Whereas the web based learning that provides access to knowledge databases, lessons through video clips, simulations and podcast. It also provides for feedback, group discussions and collaborative learning environment.

Since the SEM course has F2F learning component, an in between approach is feasible where the teaching material may be provided on CDs and feedback through the internet. The comparison between different distance learning technologies is attached in (Appendix-N).

### 4.4 Conclusion

From the above discussion and analysis it can be clearly concluded that the SEM program meets its objectives. The SEM programs will provide for lifelong career opportunities to seafarers after their sea career. After implementation of the model the career at sea will attract an increased number of talented youth. Moreover SEM implementation will assist in increasing the age of attrition and increase positive awareness in the society.

There are different approaches to implement SEM, METI and maritime universities have to choose the relevant options. Collaboration, cooperation and integration of METI, maritime universities and facilitators in the maritime clusters are necessary to provide a rich and multidisciplinary knowledge base to the maritime industry. That will make the industry more visible and assist attract talented youth to the industry.

“Collaboration means more energy, more ideas, more wisdom; it also means investing beyond one's own particular interest or bailiwick.”

Drew G. Faust President of Harvard University
Chapter 5 Conclusions and recommendations

5.1 Conclusions

This study has followed a logical sequence of addressing the issue of lack of seafarers today, vis-à-vis the global requirement, why it is a problem, a suggestion to look at the solution differently and the procedure of implementing the solution. The concluding chapter is an endeavour to implore the maritime community to seriously consider the issue of empowering the seafarer in order to overcome the gap between the supply and demand of seafarers in future so that the age old shipping industry is prevented from behaving like a “rudderless boat”!

It has been proved through study that the shipping industry and the maritime cluster require highly skilled and competent manpower. The maritime cluster depends on former seafarers for filling up there jobs. Both the shipping industry and the maritime clusters are facing shortage of manpower. The shortage of skilled manpower is likely to increase as the supply of ships is greater than the trained manpower supply.

Furthermore career at sea has lost its charm and is not a career for life. Even the prime attracting factor, high wages has lost much of its influence due to better wages ashore. The visibility and image of the career at sea either is poor or it does not exist.

Seafaring youth have started leaving shipping for higher education at a younger age and rank. This is in preparation for a life long career option ashore. As has been shown, family is the main reason for seafarers to shift ashore.

Creating a career path through seafaring into the maritime cluster or other careers ashore is an option to make a career at sea an attractive proposition. Higher education is required for getting into good career options ashore.
A comprehensive solution of empowering seafarers cognitively in an integrated environment through hybrid learning mode is proposed as a Seafarer Empowerment Model. Based on his research for this study, the author strongly feels that the model will empower the seafarer with appropriate education to foster growth for self, as well as for the seafaring community. After education seafarers form cluster of influence around them and through networking between the clusters, spread positive awareness about seafaring and shipping in society.

The effectiveness of the model was checked through a questionnaire and the result is encouraging. Over 80% of the respondents perceive that it will improve the image of the shipping industry and the seafarer, it will help attract more talented youth to the industry and it is also likely to increase retention duration. As shown in the previous chapter, SEM implementation is also likely to contribute to his increased performance both on board ship and ashore. The respondents commented favourably on the model and reflected urgency in its implementation.

There are different methods of implementing the model; the ideal method of implementation is through expansion and collaboration, whereby the maritime university or METI provides education in non maritime streams and collaborate with the maritime cluster companies and with society to integrate the seafarer into the main stream of society. There are a few maritime universities operating in the integrated environment but are not offering higher learning courses to seafarers at sea. In this research the integrated environment of two universities\textsuperscript{40} was found to have contributed to better social integration of seafarers with non maritime streams and increased awareness in society.

5.2 Recommendations

Empowerment of seafarers has a very wide scope as empowerment has multidimensional and multidiscipline application. The recommendations given below

\textsuperscript{40} Informal interview with faculty of AASTM and SMU
only relate to the cognitive empowerment of seafarers. However the author opines that the other aspects of empowerment such as legal rights, social, political, management, woman seafarers and seamen also needs to be looked into, which were not dealt with in this study.

- The SEM concept needs to be further researched with respect to advantages of integrating MET with non marine education, for which SEM may be first tried as a pilot project in integrated maritime universities such as IGNOU, AASTM and SMU.

- On account of space and time this study could not suggest an appropriate number of course curricula for the empowerment programs that connect seafaring to maritime cluster and other shore based industries. So it is recommended that further research should be done to suggest course curriculum covering the various career path options ashore.

- Recognition of the seafarer’s prior learning and certificate of competency in the academic world is still a problem and causes frustration among seafarers. It is recommended that the STCW competence table or the IMO model courses also have credits assigned to them. This research activity will assist in motivating lifelong learning among seafarers.

- The keen desire and need shown by respondent seafarers\(^\text{41}\) for higher learning is a positive indication for the industry and before the frustration sets in and below average students creep into the system, METI should take this opportunity to develop higher education programs suitable to seafarers needs. For instance IAMU and WMU are ideally suited to develop global post graduation programs for seafarers.

\(^{41}\)A sample of 397 respondents spread across 22 countries
This research study did not consider issues related with isolation and disadvantages of seamen. With reduced Manning and increased sophistication, the level of education and training of seamen also needs to be enhanced and that may also be possible on board. The application of SEM concept to seamen needs to be look into. With ratings in surplus, SEM concept when applied to seamen may even yield better results. The study of this aspect also needs an urgent attention as it may help reduce manpower shortage at officer level.

“However, in today’s world, “fashioning a work identity” may well be translated into “fashioning an identity” More and more, we are what we do. More frequently we are asked “What do you do?” rather than “Who are you?” For the young, this decision is critical in determining the outcome of their lives.” 42

Therefore the “image” of the shipping industry is an important factor for career decision making. ‘Career choice and development’ theories can play a crucial role in influencing the talented youth, so the marketing shipping and seafaring should be done using these theories.

The seafarer has a critical role in the shipping industry and the maritime cluster. He is also a powerhouse of practical skills and experiences, so empowering him with higher education will catapult his performance and career. He is also the ambassador of the shipping industry and to use him to advantage for other than sailing will help the cause of the industry. The thought of providing higher education to seafarer brings the question to the forefront that why should he have to leave sailing.

42 Source: http://www.extension.psu.edu/workforce/Briefs/OverviewCareerDev(Insert).pdf
Then these words of Sir George Bernard Shaw are very apt:

“I am of the opinion that my life belongs to the whole community, and as long as I live it is my privilege to do for it whatever I can.”

“I want to be thoroughly used up when I die, for the harder I work the more I live. I rejoice in life for its own sake. Life is no "brief candle" for me. It is a sort of splendid torch which I have got hold of for the moment, and I want to make it burn as brightly as possible before handing it on to future generations.”
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*SSTA Research Centre Report #90-04* (No. SSTA Research Centre Report #90-04: University of Regina.


Appendix A: PRESENTATION OF DATA

Three sets of questionnaires were created and e-mailed to METI using network of WMU students, on board ships through fleet managers of some companies, members of seafarer yahoo groups. The questionnaires were also posted on WMU community and Swedish officers website. Few responses were collected during the field study trips as well. A total of 397 responses were received, The responses has been received from 22 different countries\(^{43}\). Out of the sample 66% is from India, 9% from OECD countries, 21% from Far East countries, 2% from Eastern European countries, 2% form Africa and Latin American countries. Their backgrounds are given below:

Source: Author, 2007

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\(^{43}\) Netherland, Japan, Germany, Sweden, England, New Zealand, Philippines, China, Indonesia, Thailand, Singapore, Malaysia, India, Algeria, Egypt, Turkey, Russia, Croatia, Romania, Peru, Chile, Poland
Influencing factors

The factors that influenced seafarers on choosing career at sea are given in Table A-1, weighted on Linkert scale of 1-5.

<table>
<thead>
<tr>
<th></th>
<th>Cadet/Trainee</th>
<th>Ship’s Officers</th>
<th>Seafarers working Ashore</th>
<th>Combined Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family/Relative/Friend/Neighbour Influence</td>
<td>3.03</td>
<td>2.66</td>
<td>2.55</td>
<td>2.77</td>
</tr>
<tr>
<td>Pay and Conditions</td>
<td>4.05</td>
<td>3.83</td>
<td>3.62</td>
<td>3.88</td>
</tr>
<tr>
<td>Good Careers Prospects</td>
<td>3.6</td>
<td>3.14</td>
<td>3.36</td>
<td>3.35</td>
</tr>
<tr>
<td>Adventures and Interest in sailing</td>
<td>3.78</td>
<td>3.2</td>
<td>3.45</td>
<td>3.46</td>
</tr>
<tr>
<td>Foreign Travel</td>
<td>4.01</td>
<td>3.47</td>
<td>3.55</td>
<td>3.68</td>
</tr>
<tr>
<td>Independence</td>
<td>3.62</td>
<td>3.48</td>
<td>3.36</td>
<td>3.51</td>
</tr>
<tr>
<td>Flexibility</td>
<td>3.15</td>
<td>2.97</td>
<td>2.63</td>
<td>2.98</td>
</tr>
</tbody>
</table>

Table A-1: Influencing Factors Linkert scale (1-5) averages

The factor that influence respondents the most in choosing a career at sea is pay scales. Adventures at sea, good career prospects and foreign travel are also the other major influencing factors. The family influence is fairly low in making a career choice. Independence and flexibility are also on lower side. The factors influence has decreased with age.

Source: Author, 2007
Flashback of own career satisfaction

The respondents were asked to rank their career satisfaction levels using Linkert scale of 1-5, at different times on the career path. The responses reflect that satisfaction level changes with time initially increasing till one reaches the highest rank or till the time of marriage thereafter the satisfaction level drops.

<table>
<thead>
<tr>
<th>(Likert Scale)</th>
<th>Ship’s Officers</th>
<th>Seafarers working ashore</th>
<th>Combined average</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 years &gt; of sea service</td>
<td>3.482558</td>
<td>3.760563</td>
<td>3.563786</td>
</tr>
<tr>
<td>2 years &lt; of sea service</td>
<td>3.571429</td>
<td>3.833333</td>
<td>3.657534</td>
</tr>
<tr>
<td>5 years &lt; of sea service</td>
<td>3.474453</td>
<td>3.772727</td>
<td>3.571429</td>
</tr>
<tr>
<td>Now</td>
<td>3.348993</td>
<td>3.661765</td>
<td>3.447005</td>
</tr>
</tbody>
</table>

Source: Author, 2007

Seafarer’s opinion how his parent’s and wife’s thinks about seafaring

The image of the seafaring changes negatively as the seafarer passes through the stages of family life and is lowest when his child starts to go to school.
Fig. A-10: Seafarer's opinion on the social image of the career

Source: Author, 2007

The data in fig A-10, reflects that the image of the career has declined over time in society, probably on account of growth of economy due which better career options are freely available ashore now. Email responses of 57 WMU students to the question on the image of the sea career in society in their country of origin gave a result of 2.7 on 5 and they themselves rated it at 2.9.

Promoting the career at sea

The question was asked to know if seafarers are promoting the career at sea among the talented youth and in society or not.

<table>
<thead>
<tr>
<th>Ex-seafarers working ashore</th>
<th>V. Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Son</td>
<td>24.2857</td>
<td>25.7142</td>
<td>37.1428</td>
<td>10</td>
<td>2.8571</td>
</tr>
<tr>
<td>Daughter</td>
<td>56.5217</td>
<td>30.4347</td>
<td>11.5942</td>
<td>1.4492</td>
<td>0</td>
</tr>
<tr>
<td>Sister</td>
<td>53.125</td>
<td>31.25</td>
<td>14.0625</td>
<td>1.5625</td>
<td>0</td>
</tr>
<tr>
<td>Ships officer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Son</td>
<td>31.3609</td>
<td>24.8520</td>
<td>31.9526</td>
<td>11.2426</td>
<td>0.5917</td>
</tr>
<tr>
<td>Daughter</td>
<td>73.3766</td>
<td>15.5844</td>
<td>11.0389</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Brother</td>
<td>32.9113</td>
<td>22.1518</td>
<td>28.4810</td>
<td>13.9241</td>
<td>2.5316</td>
</tr>
<tr>
<td>Sister</td>
<td>76.2820</td>
<td>13.4615</td>
<td>10.2564</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table A-2: Seafarer’s priority values to Sea career for his relatives (Percentage)
**Source:** Author, 2007

**Table A-3: % of seafarers recommending sea career to talented youth**

<table>
<thead>
<tr>
<th></th>
<th>Cadets</th>
<th>Ship’s officers</th>
<th>Ex-Seafarers working ashore</th>
<th>Combined Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talented Youth</td>
<td>68.89%</td>
<td>32.78%</td>
<td>51.39%</td>
<td>48.87%</td>
</tr>
</tbody>
</table>

The reasons for recommending or not recommending the career at sea are enlisted in Appendix -B and C respectively.

**Isolation or Monotony**

The respondents were to grade their agreement with respect to the following

<table>
<thead>
<tr>
<th>Ships officer</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated at Sea, Isolated Ashore</td>
<td>4.44</td>
<td>13.33</td>
<td>20</td>
<td>39.44</td>
<td>22.78</td>
</tr>
<tr>
<td>Career at sea is boring after sometime</td>
<td>6.67</td>
<td>17.78</td>
<td>24.44</td>
<td>39.44</td>
<td>11.67</td>
</tr>
<tr>
<td>Ex-seafarers working ashore</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolated at Sea, Isolated Ashore</td>
<td>2.82</td>
<td>23.94</td>
<td>19.72</td>
<td>35.21</td>
<td>18.31</td>
</tr>
<tr>
<td>Career at sea is boring after sometime</td>
<td>5.56</td>
<td>19.44</td>
<td>18.06</td>
<td>50</td>
<td>6.94</td>
</tr>
</tbody>
</table>

**Table A-4: Seafarers rating’s of monotony and isolation in career at sea (%)**
Career Longevity

Most of the seafarers do not agree that the career at sea is a lifelong career.

<table>
<thead>
<tr>
<th>Ships officer</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Career is a life long Career</td>
<td>26.92</td>
<td>32.42</td>
<td>26.37</td>
<td>12.67</td>
<td>1.65</td>
</tr>
<tr>
<td>Post Graduation programs should be provided for seafarers at sea</td>
<td>1.68</td>
<td>3.91</td>
<td>13.97</td>
<td>35.75</td>
<td>44.69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ex-seafarers working ashore</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Sea Career is a life long Career</td>
<td>17.39</td>
<td>36.23</td>
<td>23.19</td>
<td>15.94</td>
<td>7.25</td>
</tr>
<tr>
<td>Post Graduation programs should be provided for seafarers at sea</td>
<td>5.8</td>
<td>5.8</td>
<td>5.8</td>
<td>24.64</td>
<td>57.97</td>
</tr>
</tbody>
</table>

Table A-5: Seafarer’s rating’s of monotony and isolation in career at sea (%)
The need for higher education has been clearly felt by most seafarers. Over 91% of the seafarers are in agreement that post graduation programs should be provided to them at sea.

Reasons for shifting ashore
The family influence is the strongest influence for the seafarers to take up a shore job. Over 94% have felt moderate and above influence, 88% influence has been the academic and career progression and 72% influence is the coincidental opportunity.

Influence of Sea career on job ashore
Over 94% of respondents feel that sea career assisted them in getting shore job, 91% report that it also assists them in doing their job and only 68% feel the career at sea has assisted them in adjusting to job ashore. Employers rate seafaring at a scale 3.6 on 5 and colleagues rate them at 3.7 on 5. The skew is more towards higher side, ‘average’ category numbers are 37% that brings the rating lower.

Effectiveness of the Model
To check the effectiveness of the model the respondents were asked to fill up the part ‘B’ of the closed type questionnaire.

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44 Percentage calculated after neglecting the “Neither” category responses.
Do you think this model will empower the seafarer - Academically? 93.4 6.6
Do you think this model will empower the seafarer – Professionally? 92.6 7.4
Do you think this model will empower the seafarer – Socially? 86.4 13.6
Do you think this model will help change the image of career at sea? 84.1 15.9
Do you think this model will help in the development of a life long career? 84.5 15.5
Do you think this model will help in integrating the seafarer into society? 80.6 19.4
Do you think this model will help change the image of the Shipping industry in society? 83.9 16.1
Do you think after continuous academic growth you will be able to get more jobs ashore? 89 11
Do you think after continuous academic growth you will be able to get better shore jobs? 90.6 9.4
Do you think after continuous academic growth you will be able to perform better at sea and in shore jobs? 90.4 9.6
Will you recommend the sea career path to your brothers/sisters/friends after this change? 71 29
Will you recommend the sea career path to an average student after this change? 84.4 15.6
Do you think the empowerment model will help attract talented students to the shipping industry? 82.8 17.2
Do you think the seafarer will sail longer if he is empowered as above? 72.5 27.5
Do you think you would have got better job if you were Empowered as above? 80.6 19.4

Source: Author, 2007

**Effectiveness of SEM**

**Academic and professional empowerment**

93.4% of the respondents agree that it will empower them academically, 92.6% feel it will also empower them professionally and over 90% of them also relate the academic improvement to likelihood in improvement of getting better jobs ashore and better performance ‘ashore and at sea’. Hence it may be fairly concluded that the model is likely to empower the seafarer academically and professionally.

**Society**

The image of the seafaring career in society as perceived by seafarer was low at 2.9 on Likert scale. After empowerment 83.9% of the respondent feel that it will help change the image of seafaring career in society and 86.4% feel it will empower them socially as well as 80.4% feel they will be able to integrate better into society.

**Promotion of the sea career**

In part ‘A’ of the questionnaire only 48.9% of the respondents had reported that they will recommend career at sea to talented youth and only 18% would recommended the career to
their son. After empowerment 84.4% would recommend the career to the talented youth and 71% to their son, moreover 82.8% feel the model will attract the talented youth to the career at sea. All the responses related with promotion of career at sea co-relate with each other and the responses also match with thought of 84.5% the respondents that model will help in the development of a life long career.

Attractiveness
AsSEM helps develop the career at sea into lifelong career it is likely to attract more talented youth. Seafarers are likely to recommend the sea career to his son and talented youth so a chain reaction to attract more talented youth. And seafarers think that the talented youth will be attracted to the sea career after the change.

Retention
To check the effectiveness of the seafarers with respect to retentively two questions were asked one was direct whether the seafarer would sail longer if he was empowered. To which 80.65% of respondents think that the seafarer will sail longer. The second question was how long would he sail after empowerment. Ship’s officer’s were asked his likely duration of sailing under the present conditions question was asked earlier. The comparison is shown in fig. A-14 and the over all effectiveness of the model is shown in fig. A-15

Source: Author, 2007
Appendix B: Reasons why seafarers would not recommend career at sea

All respondents were asked to give reasons why would they recommend or not recommend career at sea, most respondents gave reasons which are summarised below.

- Better career options ashore with good social life, equivalent salaries and better growth.
- No family life, no social life or social recognition even having problem to get married
- Economic uncertainty throughout the career
- Career stagnation after reaching higher rank
- Lack of academic qualification and growth
- Self dissonance
- Job uncertainty due to contracts and accidents etc.
- Commercial and mental stress
- Not lucrative any more as salary ashore is equivalent, no port stay.
- Criminalisation of seafarers and piracy attacks
- Pay differential has reduced
- Unnatural life

The following remark from a respondent summarises it all

“I would strongly dissuade anyone from joining sea. Times have changed this job is no longer lucrative. On an average seafarers are being exploited by ship-owners. Commercial pressure has increased, fatigue has increased. Seafers are isolated, they have no voice, no future. The plight of average seafarers is a sad lot”
Appendix C: Reasons why seafarers would recommend career at sea

The respondents who would recommend the career at sea to the talented youth gave the following reasons for their recommendation:

- High salary, foreign travel and good global exposure
- Good professional environment makes one practical skilful and mentally strong quite early in life
- Opportunities, knowledge, experience, leadership, management skills and Pay for the first five years are very motivating.
- Good profession- well paid, financially independent, fast growth and adventurous
- Gives good exposure, confidence and ability to deal with difficult situations
- It gives professional independence, flexibility, discipline and international atmosphere

The following remarks of two respondents’ sum it up:

“It's a great learning experience both in resourcefulness, and man management. You became good trouble-shooters and your attitude improves in positive direction.”

“It gives a very good head start, if one manages his finances and life well, shifts in time ashore, one can really make to the top of any company”
Appendix D: Recommendations to make the career at sea more attracting to the talented youth

The respondents suggested the following steps to make the career at sea more attracting by providing:

- regular job, good salary and lifelong career
- higher education appropriate to shore job requirement
- Educational and vocational opportunities both in seafaring fields and other fields where experience gained at sea can be extremely useful.
- career guidance to acquire higher education and job ashore
- recognition of COC (certification of competency) to academic qualification.
- better and cheaper internet and communication facilities
- greater media coverage, about the career at sea
- easy family carriage prospects
- rotational job between sailing and shore job on reaching highest rank of Master or Chief engineer
- opportunities to branch out to various other career fields
- conducive working environment on board similar to on shore
- Wage offers higher than those being offered ashore by MNC's and software firms. (Considering the nature of job, responsibility and isolation what a seamen is subjected too)
- for interactive sessions, trainings, seminars etc. with participation of the management so that the seamen feels a part of the organisation for which he is working. (Presently there is clear distinction between ship and office staff)
- regular employment with all retiring, insurance cover benefits etc. as contract system doesn’t make one loyal for company
- more career opportunities to rise up in the shipping industry in a more structured way
Appendix E: Difficulties faced by Ex-seafarers working ashore in getting or doing jobs ashore

Ex seafarers were asked to comment on difficulties they had in getting shore jobs. 46 of the respondents have reported comments and they are summarised as below.

- Lack of academic qualification or higher education or knowledge (17)
- Lack of shore experience or commercial experience (5)
- Non recognition of professional qualification, i.e. certificate of competency equivalent academic qualification (4)
- Non recognition of sea experience to work experience (2)
- Less pay (8)
- Scarcity of jobs or only shipping related jobs or not enough opportunities (6)
- Lack of information about shore jobs (3)
- Problem in adjusting to shore work culture and habits (3)
- Job availability through contacts then merit (2)
Appendix F: Some comments on the model by the seafarers

- The model will be helpful in changing the image of shipping career and reduce frustration coming in to the profession. (05)
- The model if adopted will attract young students, increase greater awareness and will be a launch platform for a career. It will facilitate revolutionary change in choice of career for young students. (07)
- The model will be an instrument for improving educational standards of seafarers and will bring parity with graduation degree. (05)
- The model will improve the quality of life of seafarers and vital instrument in bring changes in shipping industry. (05)
- The model if implemented in true spirit will bring intrinsic changes, solve existing problem being faced by the seafarers. (03)
- It is unprecedented model benefiting seafarers giving world wide recognition and need to be given vide publicity by making it more interactive. (03)
- The model is very good encouraging, helpful, practical desire of seamen and will look for the welfare of seafarers giving them self-satisfaction and status in society. (16)
- The model is an excellent research and attacks the root. Has capabilities to improve the shipping industry & will facilitate in face lifting the industry. (07)
- It is an excellent approach to improve shipping in every way / front practical results on implementation of model will show degree of success. (04)
- The model will give the seafarers an opportunity for a better career growth in shipping related industry as well in the industries. (03)
- This model will definitely be beneficial for the seafarer wrt academic study profession, security and socially. Thus the government and ship owners should encourage / motivating policy for higher education for seafarers. (10)
- The empowerment model will definitely help the seafarers socially, professionally and academically. The model is a good endeavour for the safe future of seafarer. It will bring a new status to seafarer, enhancing his status in his professional society. Maritime sector will be most attractive sector making seafarer proud gentlemen all over the world, bring boom to maritime world.
- Model is quite ideal and upbeat if implemented. (08)
- Internet free onboard for keeping in found with latest technology.
- This is hardly going to be helpful and will require more manpower for shipping.
- The model is good. Salary is the prime factor which should have been mentioned
- Looks good on the paper, doubt if it can be formulated in our country.
- How to bring this model in the system in true sense? (2)
Appendix G: GDP growth rate of countries supplying most seafarers

<table>
<thead>
<tr>
<th>Year (2001 - 2006)</th>
<th>China</th>
<th>India</th>
<th>Indonesia</th>
<th>Malaysia</th>
<th>Philippines</th>
<th>Thailand</th>
<th>Vietnam</th>
<th>Croatia</th>
<th>Poland</th>
<th>Romania</th>
</tr>
</thead>
<tbody>
<tr>
<td>12001</td>
<td>8.3%</td>
<td>6.7%</td>
<td>5.3%</td>
<td>6.4%</td>
<td>7.2%</td>
<td>5.8%</td>
<td>7.0%</td>
<td>6.0%</td>
<td>6.2%</td>
<td>6.1%</td>
</tr>
<tr>
<td>12002</td>
<td>8.5%</td>
<td>6.8%</td>
<td>5.5%</td>
<td>6.6%</td>
<td>7.4%</td>
<td>6.0%</td>
<td>7.2%</td>
<td>6.2%</td>
<td>6.4%</td>
<td>6.3%</td>
</tr>
<tr>
<td>12003</td>
<td>8.7%</td>
<td>7.0%</td>
<td>5.7%</td>
<td>6.8%</td>
<td>7.6%</td>
<td>6.2%</td>
<td>7.4%</td>
<td>6.4%</td>
<td>6.6%</td>
<td>6.5%</td>
</tr>
<tr>
<td>12004</td>
<td>8.9%</td>
<td>7.2%</td>
<td>5.9%</td>
<td>7.0%</td>
<td>7.8%</td>
<td>6.4%</td>
<td>7.6%</td>
<td>6.6%</td>
<td>6.8%</td>
<td>6.7%</td>
</tr>
<tr>
<td>12005</td>
<td>9.1%</td>
<td>7.4%</td>
<td>6.1%</td>
<td>7.2%</td>
<td>8.0%</td>
<td>6.6%</td>
<td>7.8%</td>
<td>6.8%</td>
<td>7.0%</td>
<td>6.9%</td>
</tr>
<tr>
<td>12006</td>
<td>9.3%</td>
<td>7.6%</td>
<td>6.3%</td>
<td>7.4%</td>
<td>8.2%</td>
<td>6.8%</td>
<td>8.0%</td>
<td>7.0%</td>
<td>7.2%</td>
<td>7.1%</td>
</tr>
</tbody>
</table>

Source: International Monetary Fund

Fleet Growth % change

Source: International Shipping and Logistics
Appendix H: Maritime Industries Career Path Mapping

Appendix I: Credit assignment to operator level COC

For awarding a degree in credit based learning system, number of credits required for a bachelor’s program, that runs for 3 years is 180 credits. For post graduation program, that runs for two years it is 2 years and requires 120 credits in addition to bachelors. The credits are based on 60 ECTS credits in one year as per ECTS. One credit has been taken as 25hrs. student load.

STCW 95 lays down a competency table in which the competency to be learned is associated with knowledge required for the competency, the method of demonstrating the skill learned and the tools for assessment. Thus the seafarer has to demonstrate his competence for each competence as per the STCW tables which is also the case in credit based learning.

As STCW competency tables are based on demonstrable learning outcomes at operation and management levels. Using detailed teaching syllabus outlined in IMO model courses 7.01, 7.03, 7.02 and 7.04 and compulsory sea time requirement the competencies can be assigned number of credits. The total credit calculation for nautical stream is given below.

<table>
<thead>
<tr>
<th>COC</th>
<th>College Time Hrs (Credit)</th>
<th>Compulsory Sea Time (WBL)</th>
<th>DLP Hrs</th>
<th>Total Credits</th>
<th>Required Credits</th>
<th>Short fall Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operator</td>
<td>1560(62)\textsuperscript{1}</td>
<td>730(29)\textsuperscript{1}</td>
<td>730(29)\textsuperscript{1}</td>
<td>160</td>
<td>180 B.Sc.</td>
<td>-20</td>
</tr>
<tr>
<td>level</td>
<td>997 (40)\textsuperscript{2}</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>707 (28)\textsuperscript{3}</td>
<td>2190 (87)</td>
<td>2190(87)</td>
<td>202</td>
<td>120 M.Sc.</td>
<td>+82</td>
</tr>
<tr>
<td>level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3264 (130)</td>
<td>2920 (116)</td>
<td>2920(116)</td>
<td>362</td>
<td>300</td>
<td>+62</td>
</tr>
</tbody>
</table>

Table 1

Source: Author, 2007
1. Pre sea training time (one year face to face learning)
2. learning hours as per IMO model course 7.03
3. One fourth of sea time taken as learning time ( one year of sea time at cadet level and three years up to masters level.)
4. Learning hours based on IMO model course 7.01
5. Available learning hours based on 2hrs daily of compulsory sea time days

Thus it can be seen that an operator level COC has approximately 160 assignable credits and is falling short by 29 credits. From 2\textsuperscript{nd} mate to master there are 87 learning credits available. Hence if 75 credits of distance learning programs can be offered to him. Out of which 30 credits is proposed to be offered to get his Bachelors and 45 credits for Masters.

\footnote{http://ec.europa.eu/education/programmes/socrates/ects/doc/ectskey_en.pdf}
Appendix J: QUESTIONNAIRE

Questionnaire for ship’s officers

A. Personal Details

<table>
<thead>
<tr>
<th>Name (Optional)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Year of Birth</td>
<td></td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
</tr>
<tr>
<td>City or Town of Residence</td>
<td></td>
</tr>
<tr>
<td>Year of Joining as trainee for sea career (ashore or on ship)</td>
<td></td>
</tr>
<tr>
<td>Approximate Sea Time in Months (After first COC)</td>
<td></td>
</tr>
<tr>
<td>Present Rank</td>
<td></td>
</tr>
<tr>
<td>Year of Promotion to Present Rank</td>
<td></td>
</tr>
</tbody>
</table>

B. Family Details (If Married)

<table>
<thead>
<tr>
<th>Year of Marriage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of children</td>
<td></td>
</tr>
<tr>
<td>Age of Eldest child</td>
<td></td>
</tr>
</tbody>
</table>

C. Educational Qualifications (Tick Highest qualification as Appropriate)

<table>
<thead>
<tr>
<th>Junior School/ secondary/ 10yrs. of schooling</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>High School/ Senior Secondary school)/ 12yrs of schooling</td>
<td></td>
</tr>
<tr>
<td>Graduate / Bachelors Degree/</td>
<td></td>
</tr>
<tr>
<td>Post Graduate / Masters Degree</td>
<td></td>
</tr>
<tr>
<td>Doctorate / Ph.D</td>
<td></td>
</tr>
</tbody>
</table>

D. Professional Qualifications (Tick as Appropriate)

<table>
<thead>
<tr>
<th>Master</th>
<th>1st Mate</th>
<th>2nd Mate</th>
<th>NCV</th>
<th>Others (Indicate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MEO Class I</th>
<th>MEO Class II</th>
<th>MEO Class III</th>
<th>MEO Class IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>7</td>
<td>8</td>
</tr>
</tbody>
</table>
E. How much did the following factors influence you in choosing career at sea?

<table>
<thead>
<tr>
<th>Influence</th>
<th>No</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family/Relative/Friend/Neighbour Influence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Pay and Conditions</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Good Career Prospects</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Adventures and Interest in sailing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Foreign Travel</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Independence</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Flexibility</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

F. How do you rank your career at sea? Very disappointed to Very satisfied.

<table>
<thead>
<tr>
<th></th>
<th>Very Disappointed</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>After Less than 2 years of sea service</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>After more than 2 years of sea service</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>After More than 5 years of sea service</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
<tr>
<td>Now</td>
<td>1 2 3 4 5</td>
<td></td>
</tr>
</tbody>
</table>

G. In your opinion how do your parents rank the sea career? (Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V. Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before you got married</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After you marriage</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

H. In your opinion how does your wife rank the sea career? (Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V. Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just after Marriage</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After 2 years of marriage</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After your 1st child started to go to school</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Now</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I. In your opinion, how does society in your country rank the sea career? (Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V. Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 years before</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 years before</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Now</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
J. What priority will you give to the sea career in choosing a career option for your son/daughter/brother? (Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V. Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V. High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Son</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Daughter</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Brother</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sister</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

K. Would you recommend a sea career to an above average student? (Tick one and give reason for your answer)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>Please give Reasons for your choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

L. To what extent do you agree or disagree with the following statements about a career at sea?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither agree/disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated at Sea, Isolated Ashore</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Career at sea is boring after sometime</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Sea Career is a life long career</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Post Graduation programs shall be provided for seafarers at sea</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

M. Given an opportunity, how long you wish to continue sailing under present circumstances? Please tick as appropriate.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td></td>
</tr>
<tr>
<td>1~3</td>
<td></td>
</tr>
<tr>
<td>3~5</td>
<td></td>
</tr>
<tr>
<td>Over 3 years</td>
<td></td>
</tr>
</tbody>
</table>

N. How do you think a seafaring career can be made more attractive to an above average student?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Please go through the illustration “Seafaring Empowerment Model” before answering the next set of questions.

**After Seafarer Empowerment Model**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think this model will empower the seafarer- Academically?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will empower the seafarer –Professionally?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will empower the seafarer – Socially?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will help change the image of a career at sea?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will help in the development of life long career?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will help in integrating seafarer into society?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think this model will help change the image of the Shipping industry in society?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think after continuous academic growth a seafarer will be able to get more jobs ashore?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think after continuous academic growth a seafarer will be able to get better shore jobs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think after continuous academic growth a seafarer will be able to perform better at sea and in shore jobs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will you recommend the sea career path to your son/daughter/brother/sister after this change?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Will you recommend the sea career path to an above average student after this change?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think the empowerment model will help attract talented students to the shipping industry?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think the seafarer will sail longer if he is empowered as above</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In your opinion how long will a seafarer continue sailing after obtaining his first COC if he/she is empowered as above?

<table>
<thead>
<tr>
<th>Options</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td></td>
</tr>
<tr>
<td>2~ 5 years</td>
<td></td>
</tr>
<tr>
<td>5 years</td>
<td></td>
</tr>
</tbody>
</table>

How long will you continue sailing if you are empowered as above?

<table>
<thead>
<tr>
<th>Options</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1~ 2</td>
<td></td>
</tr>
<tr>
<td>2~ 5</td>
<td></td>
</tr>
<tr>
<td>Over 5 years</td>
<td></td>
</tr>
</tbody>
</table>

Comments on the model if any

Appreciate very much that you took the time to complete this questionnaire.

!!!! Thank You!!!!
Appendix K: Data Summary

(All data in percentage except in table C, D and E)

C. Educational Qualifications (Tick Highest qualification as Appropriate)

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior School/secondary/10yrs. Of schooling</td>
<td>3</td>
</tr>
<tr>
<td>High School/Senior Secondary school/12yrs. Of schooling</td>
<td>197</td>
</tr>
<tr>
<td>Graduate/Bachelors Degree</td>
<td>165</td>
</tr>
<tr>
<td>Post Graduate/Masters Degree</td>
<td>31</td>
</tr>
<tr>
<td>Doctorate/Ph.D</td>
<td>1</td>
</tr>
</tbody>
</table>

D. Professional Qualifications (3 respondents did not fill up rank)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master 1st Mate</td>
<td>66</td>
</tr>
<tr>
<td>2nd Mate</td>
<td>35</td>
</tr>
<tr>
<td>MEO Class I</td>
<td>72</td>
</tr>
<tr>
<td>MEO Class II</td>
<td>5</td>
</tr>
<tr>
<td>MEO Class III</td>
<td>24</td>
</tr>
<tr>
<td>MEO Class IV</td>
<td>147</td>
</tr>
<tr>
<td>Cadets Trainees</td>
<td>7</td>
</tr>
<tr>
<td>NCV</td>
<td>5</td>
</tr>
<tr>
<td>Others (Indicate)</td>
<td>7</td>
</tr>
</tbody>
</table>

E. Present Profession (Tick as Appropriate)

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shipping Company</td>
<td>16</td>
</tr>
<tr>
<td>Ship Management Company</td>
<td>9</td>
</tr>
<tr>
<td>Maritime Education and Training</td>
<td>33</td>
</tr>
<tr>
<td>Ports and Pilots</td>
<td>1</td>
</tr>
<tr>
<td>Maritime administration</td>
<td>4</td>
</tr>
<tr>
<td>Surveyor (Class/P&amp;I/Independent)</td>
<td>0</td>
</tr>
<tr>
<td>Marine Equipment Supply</td>
<td>0</td>
</tr>
<tr>
<td>Ship agent</td>
<td>1</td>
</tr>
<tr>
<td>Other</td>
<td>7</td>
</tr>
</tbody>
</table>
F. How much the following factors influenced you in choosing a career at sea? Data in percentage

<table>
<thead>
<tr>
<th></th>
<th>No Influence</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>V.High Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family/Relative/Friend/Neighbour Influence</td>
<td>23.4</td>
<td>16.1</td>
<td>29.7</td>
<td>21.7</td>
<td>9.1</td>
</tr>
<tr>
<td>Pay and Conditions</td>
<td>1.8</td>
<td>2.8</td>
<td>25.2</td>
<td>46.6</td>
<td>23.7</td>
</tr>
<tr>
<td>Good Careers Prospects</td>
<td>7.3</td>
<td>10.4</td>
<td>35.4</td>
<td>33.7</td>
<td>13.2</td>
</tr>
<tr>
<td>Adventures and Interest in sailing</td>
<td>4.3</td>
<td>15.4</td>
<td>28.0</td>
<td>34.8</td>
<td>17.4</td>
</tr>
<tr>
<td>Foreign Travel</td>
<td>2.8</td>
<td>8.6</td>
<td>27.5</td>
<td>40.3</td>
<td>20.9</td>
</tr>
<tr>
<td>Independence</td>
<td>6.6</td>
<td>7.3</td>
<td>32.1</td>
<td>36.9</td>
<td>17.2</td>
</tr>
<tr>
<td>Flexibility</td>
<td>12.1</td>
<td>18.3</td>
<td>37.3</td>
<td>24.7</td>
<td>7.7</td>
</tr>
</tbody>
</table>

G. How do you rank your career at sea? Very disappointed to Very satisfied.

<table>
<thead>
<tr>
<th></th>
<th>Very Disappointed</th>
<th>Very Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>After Less than 2 years of sea service</td>
<td>3.7</td>
<td>12.3</td>
</tr>
<tr>
<td>After more than 2 years of sea service</td>
<td>1.8</td>
<td>9.6</td>
</tr>
<tr>
<td>After More than 5 years of sea service</td>
<td>3.0</td>
<td>10.8</td>
</tr>
<tr>
<td>Now</td>
<td>5.1</td>
<td>11.1</td>
</tr>
</tbody>
</table>

I. In your opinion how does your wife rank the sea career?

<table>
<thead>
<tr>
<th></th>
<th>V.Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V.High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just after Marriage</td>
<td>12.9</td>
<td>11.7</td>
<td>35.1</td>
<td>31.0</td>
<td>9.4</td>
</tr>
<tr>
<td>After 2 years of marriage</td>
<td>11.6</td>
<td>15.5</td>
<td>39.4</td>
<td>27.1</td>
<td>6.5</td>
</tr>
<tr>
<td>After your 1st child started to go to school</td>
<td>17.9</td>
<td>25.2</td>
<td>30.1</td>
<td>23.6</td>
<td>3.3</td>
</tr>
<tr>
<td>Now</td>
<td>18.2</td>
<td>21.6</td>
<td>29.7</td>
<td>23.6</td>
<td>6.8</td>
</tr>
</tbody>
</table>

J. In your opinion, how does society in your country rank the sea career? (Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V.Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V.High</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 years before</td>
<td>6.9</td>
<td>17.2</td>
<td>26.3</td>
<td>32.3</td>
<td>17.2</td>
</tr>
<tr>
<td>10 years before</td>
<td>3.0</td>
<td>11.4</td>
<td>48.7</td>
<td>31.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Now</td>
<td>4.8</td>
<td>27.2</td>
<td>45.2</td>
<td>16.4</td>
<td>6.4</td>
</tr>
</tbody>
</table>
K. What priority will you give to the sea career in choosing a career option for your son/daughter/brother?(Rate 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>V.Low</th>
<th>Low</th>
<th>Average</th>
<th>High</th>
<th>V.High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Son</td>
<td>56.9</td>
<td>14.6</td>
<td>21.1</td>
<td>5.7</td>
<td>1.6</td>
</tr>
<tr>
<td>Daughter</td>
<td>56.5</td>
<td>30.4</td>
<td>11.6</td>
<td>1.4</td>
<td>0.0</td>
</tr>
<tr>
<td>Brother</td>
<td>20.3</td>
<td>26.6</td>
<td>40.6</td>
<td>9.4</td>
<td>3.1</td>
</tr>
<tr>
<td>Sister</td>
<td>53.1</td>
<td>31.3</td>
<td>14.1</td>
<td>1.6</td>
<td>0.0</td>
</tr>
</tbody>
</table>

L. Would you recommend a sea career to an above average student? (Tick on and give reason for your answer)

<table>
<thead>
<tr>
<th></th>
<th>Please give Reasons for your choice (Appendix)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>194</td>
</tr>
<tr>
<td>No</td>
<td>203</td>
</tr>
</tbody>
</table>

M. To what extent do you agree or disagree with the following statements about a career at sea?

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither</th>
<th>Agree</th>
<th>Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolated at Sea, Isolated Ashore</td>
<td>3.9</td>
<td>16.5</td>
<td>19.7</td>
<td>38.6</td>
<td>21.3</td>
</tr>
<tr>
<td>Career at sea is boring after sometime</td>
<td>6.7</td>
<td>18.0</td>
<td>22.7</td>
<td>42.4</td>
<td>10.2</td>
</tr>
<tr>
<td>Sea Career is a life long Career</td>
<td>24.0</td>
<td>33.5</td>
<td>25.6</td>
<td>13.4</td>
<td>3.5</td>
</tr>
<tr>
<td>Post Graduation programs shall be provided for seafarers at sea</td>
<td>2.8</td>
<td>4.4</td>
<td>12.0</td>
<td>33.1</td>
<td>47.8</td>
</tr>
</tbody>
</table>

N. What factors influenced you in taking up a job ashore?

<table>
<thead>
<tr>
<th></th>
<th>No Influence</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>V.High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Life</td>
<td>1.5</td>
<td>5.9</td>
<td>10.3</td>
<td>35.3</td>
<td>47.1</td>
</tr>
<tr>
<td>Coincidental opportunity</td>
<td>18.1</td>
<td>9.7</td>
<td>23.6</td>
<td>27.8</td>
<td>20.8</td>
</tr>
<tr>
<td>Academic growth and different career</td>
<td>5.9</td>
<td>5.9</td>
<td>20.6</td>
<td>27.9</td>
<td>39.7</td>
</tr>
</tbody>
</table>
O. How much did service at sea assist you…………….? Rate (1-5)

<table>
<thead>
<tr>
<th></th>
<th>No Influence</th>
<th>Low</th>
<th>Moderate</th>
<th>High</th>
<th>V. High</th>
<th>Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>In getting a job ashore</td>
<td>3.9</td>
<td>1.3</td>
<td>19.7</td>
<td>38.2</td>
<td>36.8</td>
<td></td>
</tr>
<tr>
<td>In doing you job ashore</td>
<td>5.3</td>
<td>3.9</td>
<td>21.1</td>
<td>35.5</td>
<td>34.2</td>
<td></td>
</tr>
<tr>
<td>In adjusting ashore</td>
<td>13.0</td>
<td>18.8</td>
<td>30.4</td>
<td>23.2</td>
<td>14.5</td>
<td></td>
</tr>
</tbody>
</table>

Q. What difficulties did you face when looking for shore jobs? Appendix- E

To be completed after Seafarer Empowerment Model

<table>
<thead>
<tr>
<th></th>
<th>Yes %</th>
<th>NO%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think this model will empower the seafarer- Academically?</td>
<td>93.43</td>
<td>6.56</td>
</tr>
<tr>
<td>Do you think this model will empower the seafarer – Professionally?</td>
<td>92.63</td>
<td>7.36</td>
</tr>
<tr>
<td>Do you think this model will empower the seafarer – Socially?</td>
<td>86.36</td>
<td>13.64</td>
</tr>
<tr>
<td>Do you think this model will help change the image of career at sea?</td>
<td>84.13</td>
<td>15.87</td>
</tr>
<tr>
<td>Do you think this model will help in the development of a life long career?</td>
<td>84.49</td>
<td>15.50</td>
</tr>
<tr>
<td>Do you think this model will help in integrating the seafarer into society?</td>
<td>80.58</td>
<td>19.41</td>
</tr>
<tr>
<td>Do you think this model will help change the image of the Shipping industry in society?</td>
<td>83.90</td>
<td>16.09</td>
</tr>
<tr>
<td>Do you think after continuous academic growth you will be able to get more jobs ashore?</td>
<td>89.01</td>
<td>10.99</td>
</tr>
<tr>
<td>Do you think after continuous academic growth you will be able to get better shore jobs?</td>
<td>90.55</td>
<td>9.45</td>
</tr>
<tr>
<td>Do you think after continuous academic growth you will be able to perform better at sea and in shore jobs?</td>
<td>90.43</td>
<td>9.57</td>
</tr>
<tr>
<td>Will you recommend the sea career path to your brothers/sisters/friends after this change?</td>
<td>71.01</td>
<td>28.99</td>
</tr>
<tr>
<td>Will you recommend the sea career path to an average student after this change?</td>
<td>84.35</td>
<td>15.65</td>
</tr>
<tr>
<td>Do you think the empowerment model will help attract talented students to the shipping industry?</td>
<td>82.80</td>
<td>17.19</td>
</tr>
<tr>
<td>Do you think the seafarer will sail longer if he is empowered as above?</td>
<td>72.5</td>
<td>27.5</td>
</tr>
<tr>
<td>Do you think you would have got better job if you were Empowered as above?</td>
<td>80.59</td>
<td>19.40</td>
</tr>
</tbody>
</table>
Given an opportunity, how long you wish to continue sailing under present circumstances? Please tick as appropriate. (%)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1 year</td>
<td>11.66667</td>
</tr>
<tr>
<td>1~3</td>
<td>23.33333</td>
</tr>
<tr>
<td>3~5</td>
<td>30</td>
</tr>
<tr>
<td>Over 5 years</td>
<td>35</td>
</tr>
</tbody>
</table>

How do you think a seafaring career can be made more attractive to an above average student.

In your opinion how long will a seafarer continue sailing after obtaining his first COC if he/she is empowered as above? (%)

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 2 years</td>
<td>5.142857</td>
</tr>
<tr>
<td>2~ 5</td>
<td>12</td>
</tr>
<tr>
<td>5 years</td>
<td>82.85714</td>
</tr>
</tbody>
</table>

How long will you continue sailing if you are empowered as above?

<table>
<thead>
<tr>
<th>Duration</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1~ 2</td>
<td>8.67052</td>
</tr>
<tr>
<td>2~ 5</td>
<td>13.2948</td>
</tr>
<tr>
<td>Over 5 years</td>
<td>78.03468</td>
</tr>
</tbody>
</table>

## Appendix L: Example SEM Program

<table>
<thead>
<tr>
<th>Subject</th>
<th>Semester I (15 credits)</th>
<th>Semester II (15 credits)</th>
<th>Assignments</th>
<th>Semester III (15 credits)</th>
<th>Semester IV (15 credits)</th>
<th>Semester V (15 credits)</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management I</td>
<td></td>
<td></td>
<td>Project work</td>
<td>+ Project work</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automation and controls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The duration of the bridging course is one year consisting of two semesters and 30 credits. All candidates must do a research project in second semester on shipping related topics completed during sea service. Attendance of two months course on research methodologies and workshop on humanities is compulsory at the commencement of the course. Successful completion of the two semesters leads to award of bachelors’ degree in maritime affairs.

### B.Sc. Maritime affairs:

**Eligibility:** Candidate holding Unlimited Operator Level COC

The duration of the bridging course is one year consisting of two semesters and 30 credits. All candidates must do a research project in second semester on shipping related topics completed during sea service. Attendance of two months course on research methodologies and workshop on humanities is compulsory at the commencement of the course. Successful completion of the two semesters leads to award of bachelors’ degree in maritime affairs.

---

46 Exemption from topics may be given based on comparison of specialisation topics with STCW competence table.
M.Sc. Maritime affairs:
The next set of semesters 3rd, 4th and 5th can commence only after obtaining management level COC or bachelor’s in maritime affairs. The minimum duration of the course is 24 months, out of which minimum 12 months sea time is required. A dissertation on shipping industry related topic is to be completed. The course completes with 16 week compulsory contact program covering seminars, lectures on specialisation topics, group tasks and assignments. (Internship may be looked into).
Appendix M: Career choice and development theories

Holland’s Theory (Spokane, 1996): It divides personality and jobs in six types based on the inherent nature of a person or job requirement namely realistic, Investigative, artistic, social, enterprising and conventional. Then it lays down guidelines how types, work and environment influence satisfaction, tenure and achievement. The theory is referred to as trait oriented and has produced different models for students to make a career choice.

Theory of work Adjustment (TWA) (Dawis, 1996): also a trait oriented theory which suggests a process of correspondence between work requirements and needs. The process is dynamic and for the worker to be satisfied the work must provide for needs and for the employer to provide for needs, the worker must maintain work skills for performance. It further defines personality structure, personality styles and environment structure and environment style for the worker and work environment to interact and achieve correspondence.

Krumboltz’s learning theory of career choice and counselling (Mitchell & Krumboltz, 1996): The theory has been developed over contemporary socio-cognitive perspective of Bandura where they rely on self efficacy of an individual to make a choice based on the learning histories growing out of classical, operant and observational learning as well as current learning as the self observation, world view generalization and task approach skills.

Life Span, life space theory (Super, 1990b): It lays down 16 propositions including assigning characteristics of people as abilities, personalities, needs, values, interests, traits and self concepts. It states that vocational preferences, situations, self concepts change with time governed by series of life stages. Success depends on career maturity and satisfaction depends on the level to which personal characteristic found outlet.

The above theories have been effectively used in theory of career construction and development by (Savickas, 2005).

The above mentioned theories form important concepts to know how students make career choices and how to attract them and motivate and retain them.
### Appendix N: Comparison of Distance Learning Modes

<table>
<thead>
<tr>
<th></th>
<th>1st Generation</th>
<th>2nd Generation</th>
<th>3rd Generation</th>
<th>4th Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary Feature</strong></td>
<td>One technology</td>
<td>Multiple technologies</td>
<td>Multiple technology inc. computers</td>
<td>Multi-tech + high bandwidth</td>
</tr>
<tr>
<td><strong>Type of Media</strong></td>
<td>Print, Radio, TV</td>
<td>Audio-visual, TV, Fax, Print</td>
<td>E-mail, PCs, CDs, Internet, satcoms, A/V conferencing</td>
<td>+ live video, high bandwidth transmission</td>
</tr>
<tr>
<td><strong>Communication Features</strong></td>
<td>One-way: mail, telephone</td>
<td>One-way: mail, tel, fax, face to face</td>
<td>Two-way interactive, conference, Internet</td>
<td>Two-way real time, Syn/Asyn Digital video</td>
</tr>
<tr>
<td><strong>Student Characteristics and Goals</strong></td>
<td>Isolated Mature, highly motivated</td>
<td>Inc contact Primarily isolated Highly motivated</td>
<td>Inc PC mediated contact with faculty; &amp; between students</td>
<td>Inc contact thru networked system</td>
</tr>
<tr>
<td><strong>Educational Philosophy and Curriculum design</strong></td>
<td>Highly structured materials; Information dissemination</td>
<td>95% pre-packaged Structured for independent learning Passive learner</td>
<td>Materials instructionally designed. More faculty support. Active learner</td>
<td>Inc interactive technologies. Active learner, participant, contributor</td>
</tr>
<tr>
<td><strong>Infrastructure Components</strong></td>
<td>Postal service, Radio, TV</td>
<td>TV, A/V, Tutors Upfront investment</td>
<td>PC, multimedia, www, tutors on site</td>
<td>On-line services, complex design</td>
</tr>
<tr>
<td><strong>Lecturer time</strong></td>
<td>V. Low involvement Only marking assignment</td>
<td>Low involvement Delivering lectures thru Satellite link marking assignment</td>
<td>Medium Involvement Interactive online chat Group involvement etc.</td>
<td>High Involvement Real lecture stream Question answer session etc.</td>
</tr>
<tr>
<td><strong>Feasibility on board</strong></td>
<td>Very high, Less expensive, in use SSTP</td>
<td>Not easily feasible due to TV link</td>
<td>Feasible but not for long time and slow data transfer</td>
<td>Low feasibility on account of low band width</td>
</tr>
</tbody>
</table>

Source: Adapted by Author, from Sheron and Boetcher cited in Muirhead P. Class Handout,