

Barriers to Progress or Windows of Opportunity? A Study in Career Path Mapping in the Maritime Industries

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Abstract

The objective of the study was to provide, through a series of interviews with key personnel from a range of European Member States, an overview of the following:

- *Possible and actual career paths of seafarers;*
- *Seafarer manpower requirements at sea and in relevant shore-based maritime sectors;*
- *Barriers to the mobility of qualified seafarers between the sectors.*

From this information a set of career maps were constructed for each Member State. This paper describes the methodology adopted and the findings. A number of similarities between maritime industries in the various Member States and a number of differences were found and these are discussed. Similarities included the personal qualities required by seafarers, their reasons for career moves, and the processes involved. There are also a number of common factors that are markedly different in each Member State, including the culture of the individual country. The paper concludes with a comparison between these factors and known dimensions of culture.

Keywords: occupational choice; career paths; national cultures.

1. Introduction

The Communication from the Commission to the Council and the European Parliament in 2001 on the training and recruitment of seafarers¹ produced several significant conclusions and recommendations. Of particular relevance to this study were the recommendations on the organisation of co-ordinated awareness campaigns to re-launch the image of the shipping industry and the support of research into the present and potential job content and career paths of active and former seafarers, at sea and on shore.

The more recent Council conclusion in 2003², having regard to the 2001 Communication, considered that further action should focus on the following three objectives:

- The improvement of the image of the seafaring profession, aiming at attracting young people to work at sea;
- The assessment of existing human resources and seafarers' qualifications;
- The improvement of maritime education and training.

¹ Communication from the Commission to the Council and the European Parliament on the training and recruitment of seafarers. COM(2001)188 final. 6.4.2001.

² Promotion of Sea Transport and the Seafaring Profession – Council Conclusions. 9686/03 (Presse 146)

The Council encouraged social partners to contribute to such efforts to attract young people to the seafaring profession and invited ship owners, in particular, to promote the idea of a career with perspectives of mobility, promotions and future employment on land. The aim of this study, therefore, was to contribute to these initiatives by mapping the multiple career opportunities that exist for European seafarers.

The objective of the study was to provide, through the construction of a series of career maps across a range of selected Member States, an overview of the following:

- Possible and actual career paths of seafarers;
- Seafarer manpower requirements at sea and in relevant shore-based maritime industries, where information was available;
- Barriers to the mobility of qualified seafarers between the sectors.

2. Methodology

The project commenced on 01 July 2004 and was officially completed on 30 June 2005. The methodology for the project had the following elements:

1. A review of existing literature and studies relevant to career mapping.
2. A series of interviews with key personnel in selected Member States. These individuals represented both public and private maritime sectors, including representatives from a variety of maritime organisations and other stakeholders, such as ship owning organisations and trade unions. The interviews were conducted primarily in person, although some interviews were conducted by telephone. The following 10 Member States were selected for the study:

Denmark, Germany, Greece, Italy, Latvia, the Netherlands, Poland, Spain, Sweden, and the United Kingdom. The selected Member States represented a range of both northern and southern States and candidate countries. All the Member States selected have significant numbers of seafarers³. They also represent different maritime cultures, regimes and clusters.

4. Initial pilot studies were undertaken in Denmark and Greece. The process was reviewed and then extended to the other 8 Member States. The extent of the information obtained from each country is a function of what was available, what could be assembled within the resources of the project, and the willingness of individuals to participate. In this latter respect, all those who did participate were extremely co-operative and encouraging in their support for the aims of the project.
5. The data from the interviews was analysed to create an individual report and a career map for each of the selected Member States. The individual career maps were attached to each individual country report and, where possible, adopted the same employment categories used in the 2001 study on the

³ BIMCO/ISF Manpower Update 2000

economic impact of maritime industries in Europe.⁴ A generic career map is shown in Appendix 1.

3. General Findings Of The Project

3.1 Introduction

The findings are the result of either the analysis of the general views and opinions expressed by the interviewees from all the selected Member States or from the research findings of previous studies, as referenced.

In the course of this analysis, it became apparent that there are a number of similarities between the maritime industries in the various Member States and a number of differences. The general findings of the study are therefore described under these two broad headings: similarities and differences.

The similarities relate to the general nature of seafaring as an occupation and matters relating to an individual's choice of career and the general processes that have to be undergone to effect a change in career. Seafaring, unlike most other occupations, requires individuals to leave home and spend considerable periods of time, working and socialising, in a confined vessel isolated, for the most part, from normal society. Seafaring, like occupations such as mining, is considered one of the more dangerous careers. It has a language of its own, and "knowledge" that can only be gained through the "rites of passage". Consequently, seafaring is a way of life that knows no national boundaries and is reflected in the "brotherhood" of seafarers wherever they may come from. It is this brotherhood that explains why seafarers are often welcomed in shore positions where they will be in contact with either other ex-seafarers or serving seafarers. The general processes, which seafarers undergo in coming ashore, are also essentially the same in all the Member States that were covered in this study.

However, there are also a number of common factors that are markedly different in each Member State. These differences are a function of the cultures of the individual country. The following common factors, which have an influence on the way in which maritime affairs are conducted in each Member State, have been identified during the study:

- The geography and location of the country;
- The strength of the family culture;
- The maritime education and training system.

3.2 Similarities

The similarities that are common to all the Member States, and probably all maritime nations, are as follows:

⁴ Economic Impact of Maritime Industries in Europe. Policy Research Corporation N.V. 2001.

1. The personal qualities of successful seafarers in relation to both the nature of seafaring and to shore side employment;
2. The reasons for choosing to go to sea initially;
3. The reasons for staying at sea;
4. The reasons for coming ashore;
5. The general processes and problems which seafarers undergo in order to progress their careers ashore.

3.2.1 Personal qualities of successful seafarers

Seafarers are especially valued by shore employers for a number of reasons:

1. Their knowledge of ships, shipping, systems and maritime processes
2. Their maritime credibility
3. Their ability as independent, self-reliant and resourceful workers.
4. Leadership potential.

These are qualities and values that the seafarer adopts at an early stage in their seafaring careers, making them present even in young junior officers. Former officers often present very similar CV's in terms of qualifications and general sea experience when seeking shore employment. They will, therefore, often be selected by employers on the basis of their personal attitude, and their "fit" with the recruiting organisation.

Seafarers are perceived to have some disadvantages, however, and these may be summarised as:

1. Seafarers can be perceived by shore dwellers as rather narrow-minded in their relationships to the world at large. This may be explained partly by the insular life aboard ship, where work and social life mingle, but is necessarily isolated from the outside world.
2. An officers' education may be too preoccupied with narrow operational technical questions for some management positions ashore. There is a view among some prospective shore-based employers that maritime education should focus more on general management issues, including commercial and business management.
3. Prospective shore employers may consider that these characteristics are especially true of senior officers, who may be seen as being fixed in their ways, and averse to change and the authority of others.

3.2.2 Reasons for going to sea

An individual's choice of career may be influenced by a number of factors to which any young person may be exposed, but the following appear to be the most significant:

1. The location of home or place of upbringing. In most Member States, there are traditional areas that have been, and often continue to be, significant areas from which seafarers may be recruited
2. Family influence. It has been a repeated research finding that the majority of recruits have a seafaring family member: usually a parent, grandparent

or an uncle, and this is often their source of information regarding careers at sea. For example, Fricke (1974)⁵ found that 55 percent of UK cadets questioned had a father who had been to sea, and Zhao (1998)⁶ found that 66 percent of the female cadets she surveyed had a father in the Merchant Navy. In a more recent survey of UK cadets⁷, it was found that 41 percent of those who responded had received information about the sea from a family member at sea.

3. Good career prospects. This is actually a combination of factors, but it often features as the most important single factor in an individual's career choice⁸. This will include salary expectations in relation to similar levels in the individual country, status of the profession, and the opportunity for early responsibility and promotion.
4. A long-term interest in the sea.
5. Travel. This factor is probably less influential in the modern age of jet travel and "back-packing" but is still mentioned in the top five list of reasons.

3.2.3 Reasons for staying at sea

Those individuals who stay in the seafaring profession are perceived to be the more practical minded, often with a long held ambition to become a Master or Chief Engineer. They are people who appreciate the job and the seafaring lifestyle, enjoy the handsome remuneration, and the long vacations. There are also those who find fulfilment of their personal ambitions outside their working life and find seafaring conducive to the pursuit of these other activities.

Another factor that may determine the length of time spent at sea by an individual is "fast track" promotion, which in some companies has become the rule rather than the exception. Within a few years, an officer's salary may be at a level that is difficult to match in a normal shore job. Often this high salary will be followed by financial commitments, sometimes referred to as the "mortgage trap", which may be difficult to meet with a "normal" salary.

Finally, another trend that may have an impact on an individual's decision to stay at sea is the changing relationship between the individual seafarer and his employer. With many seafarers now employed by crewing agencies, they will often move between different vessels and companies, and will not develop an allegiance to a particular operator or shipping company. Officers, who enjoy permanent contracts with shipping companies, may be more committed to their employers and, therefore, have a higher retention rate at sea.

⁵ Fricke P. H., (1974) *"The Social Structure of Crews."* Cardiff: Department of Maritime Studies, University of Wales

⁶ Zhao M. (1998) *"Women Seafarers in the EC: a preliminary report based on German and UK case studies"*. Cardiff: Seafarers' International Research Centre

⁷ Pekcan, C., Barnett, M and Gatfield,D (2003) *"A National Survey of Cadets"* Warsash Maritime Centre

⁸ Pekcan, C., Barnett, M and Gatfield,D (2003) *ibid*

Where data is available, it tends to confirm the general view of interviewees that those who are still at sea ten years after graduation, are likely to stay for the rest of their working lives⁸.

3.2.4 Reasons for coming ashore

Individuals will make career decisions based on a number of factors, which they experience during the course of their seagoing life. In the case of ratings, many regard the life as a seafarer as a passing phase of life anyway, but many have also been forced to leave the profession because of lack of employment opportunities. Among the most common factors affecting officers are pressure from the family and a commitment to pursue an opportunity that suddenly presents itself.

Pressure from the family. This major incentive to leave the sea stems from the requirements of the modern family, where it is expected that both parties will pursue a career, making the efforts of both necessary in relation to the child caring demands made by the young family. This economic development during the last forty years has resulted in a growing pressure on young seafarers with families to find a shore job. This reason for coming ashore will generally occur when an officer is in his twenties or early thirties when many couples are building families.

Coincidental opportunity. The shift towards a shore side career is often the result of an opportunity that has suddenly presented itself, by what can be described as “fortuitous coincidence”. This may be the case when the shipping company requests the officer to take employment in the shore side of the organisation, or when a job in the local port administration, or with a small local ferry operator, suddenly presents itself without anticipation.

Other reasons mentioned by interviewees focus on difficult social conditions on board, caused by small crews, cultural differences between nationalities, stress and high workloads, all of which results in loneliness and the need for a more conventional social life. In addition, the lack of a company culture, which helps to create a bond between the officers and the shipping company and a feeling of belonging, is reported to be a problem that diminishes job satisfaction.

3.2.5 The way ashore

Former seafarers who have come ashore because the right opportunity presented itself suddenly will often tend to stay, and perhaps make career progression, with the same employer or in the same line of work. In contrast, seafarers who seek to come ashore following a more conscious planned decision, will often follow a more complicated route, by preparing and putting themselves in a position, in which they can respond to recurring opportunities. The pattern differs somewhat between engine and deck officers.

Deck officers who have decided to seek employment ashore will often have to manoeuvre into an intermediate position in order to land their desired job. This is particularly the case in relation to traditional job areas like pilotage, ports

administration and stevedoring, where it is customary for candidates to present themselves and their intention, and be in a position to apply and fill a vacancy, should the need arise. Deck officers will very often stay in the maritime industry as pilots, with the water police, as VTS officers⁹, as lockmasters, as superintendents with shipping and ship management companies, as inspectors and surveyors, in various functions with the ports, with the maritime administration and education or in a range of functions in the general logistics industry. Former deck officers are valued as leaders and will often find employment in middle management in generalist functions within administration, general management, sales, HR, education, classification or as self employed.

Engineer officers will often aim for shore employment within a very well defined group of jobs at large plants where their operational skills and experience are in demand. This focus, a relatively steady demand and the tradition to employ engineers directly from sea, enables Engineer Officers to await the right opportunity from their regular jobs. Engineer Officers have a wider choice than deck officers, and are often sought after wherever large comprised plants are being operated and maintained. This is the case in relation to large plants in the manufacturing and processing industries and the traditional areas of employment within public utility industries, power and nuclear plants as well as many jobs as technical supervisor for large buildings or compounds with a range of technical infrastructure like hospitals, hotels and conference centres. Within the maritime industry, Engine Officers are in demand as inspectors and surveyors with shipping, management, classification and insurance companies, or in operational functions with shipping and management companies, shipyards, and engine manufacturers, with maritime service and repair and in various functions as superintendents.

3.2.6 Career Progression on Shore

The general impression is that former officers make attractive employees in shore-based professions and will progress well. They will often start at middle management level and generally progress towards the top of middle management, but only a few go much further and only very few to the absolute top of senior management. The lack of general management and business qualifications mentioned above is believed to be one explanation for this inability to reach the pinnacles of management.

3.2.7 The Scope for Returning to Sea

This is a specific issue that is often raised in relation to discussion about future shortages, and in relation to the possible design of a more appealing job and a more flexible career path.

Firstly, it should be noted that the numbers involved are quite small. However, the issue seems to have two categories of personnel, those who will wish to return within 3-5 years of leaving the sea, and those who stay ashore longer.

⁹ VTS, Vessel Traffic System, reporting, monitoring and to some extent managing maritime traffic by radar, radio and AIS, Automatic Identification System.

It appears that some seafarers find it difficult to adapt and get a solid foothold ashore, and return to sea within a few years. One explanation for this is that the shore job sometimes does not live up to expectations, and that the requirements on management ashore, i.e., to be available at all times, leave the seafarer missing the long periods of time-off in the seafaring profession. This is mentioned particularly in relation to former senior officers, who will return to sea encouraged by their families, who find that the seafaring life offered better conditions and more “quality time” for the family as a whole. It is also noted that seafarers ashore miss the sensation of being “on the move” and the changing pattern of their voyages. This is the “flipside” of their valued ability to think on their feet, improvise and solve problems as they occur.

If the seafarer, however, has been ashore for more than five years, it seems that their desire to return to sea is motivated by some unfortunate occurrence more than by a genuine wish. The occurrences that are most frequently mentioned are divorce and unemployment. At the same time, changes are happening at sea at a rate that makes ship operators doubtful that a seafarer who has been ashore for more than 5-7 years can adapt successfully again to the modern way of life afloat. The result is an almost unanimous opinion of the interviewees that indicates that despite the lack of officers and a certain interest on the side of former officers to return, this will hardly be possible for officers who have been away for more than five years or who are above the age of 50.

3.2.8 Barriers to Mobility

All individuals face their own challenges when contemplating a change of employment and seafarers are not exempt from these problems. However, there are a number of general issues for seafarers coming ashore or moving between sectors that may be summarised as follows:

- Learned helplessness. Life at sea may make some seafarers unhappy but they lack the personal drive and commitment to do anything about it. They possess “learned helplessness” and will often become embittered.
- Progression from rating to officer. Some countries have established processes for progression and encourage ratings to become officers. In other countries, the difference in rating and officer status is quite marked and there are few who make the transition.
- Lack of appropriate qualifications. In some countries, the lack of qualifications that may be equated easily with shore qualifications may be an issue. The lack of general management qualification for officers seeking shore management positions has already been mentioned.
- Lack of opportunity. One of the problems of being at sea is that individuals are away from the recruitment and interview circuit. It is more difficult for them to respond to advertisements by deadlines, organise interview dates. They have to rely on family and friends more to bring opportunities to their attention.

3.3 Differences

Whereas there are a number of factors that are common to all Member States and create the same issues or experiences for individuals, there are also a number of

common factors that are markedly different in each Member State. These factors are a function of the cultures of the individual country. The following cultural factors, which have an influence on seafaring careers and maritime clusters, have been identified during the analysis for this study:

- the geography and location of the country;
- the strength of the family culture;
- the maritime education and training system.

Geography and location.

Clearly the natural geography of a country and its location with respect to maritime trade routes are significant factors in determining the maritime tradition of a country, and by implication, the importance of maritime industries to the national economy. Such factors are likely to influence the importance that national Governments place on the maritime industries. This in turn may determine the macro-economic climate in which individuals will make career decisions. It may also be an indication of the strength of the maritime cluster. In some countries like the Netherlands, Germany and Denmark the maritime cluster is formalised and well organised, less so in countries like the UK, and maritime clusters are not so explicit in Spain, Italy or Greece. It is also noticeable that within Member States, there are strong regional sources for seafarers. Not surprisingly, these are the coastal regions of countries with large landmasses, like Germany and Spain. This is not so noticeable in a country like the UK, where nobody lives more than 70 miles from the sea.

Strength of the family culture

The interviews with key personnel in each country revealed that the influence of family and the use of extended family connections were quite different in the Member States. Greece probably represents the best example of where family connections are used to help gain employment. Such use of family connections, although present, is much less evident in a country like the UK. Such differences may make barriers to mobility less of a problem in countries where family connections can ease the way ashore or the movement between sectors.

The Maritime Education and Training System (MET).

Previous studies, such as the Thematic Network on Maritime Education (METNET)¹⁰, co-ordinated by the World Maritime University, have highlighted the differences in the MET systems of European maritime nations. Although EU countries conform to the STCW95 requirements, the way in which this is achieved is markedly different in the Member States. Broadly speaking, there is a difference between the “vocational” approach, represented by the Netherlands, and the more “academic” approach favoured by countries such as Poland. In the former, more emphasis is placed on the practical work-based aspects of qualifications, in the belief that seafaring is not really an academic subject and that very successful officers may be produced without high levels of university education. The latter view provides individuals with a university

¹⁰ World Maritime University (2003) Final Technical Report: Thematic Network On Maritime Education, Training And Mobility Of Seafarers (METNET) Contract N°: 1999 – TN 10983

style education, in a belief that in order to be a successful officer it is required to have an academic theoretical underpinning and powers of critical analysis. Countries like the UK are in a transitional phase, where a vocational system is now being tempered with the introduction of degree programmes.

3.3.1 The Dimensions of Culture

The best-known model of national culture stems from the work of the Dutch social scientist, Geert Hofstede¹¹, who did some seminal work in the 1960's on national culture as a result of a survey of IBM workers in different countries. Over a number of years and in a series of books and papers, he has developed a model of culture based on four main dimensions: individualism versus collectivism; power distance; uncertainty avoidance and masculinity versus femininity. Different countries can be plotted along each of these dimensions.

A comparison between these dimensions and the dimensions of maritime culture which have been identified above reveals some interesting relationships:

1. The relationship between the presence and strength of clustering between maritime sectors and Hofstede's power distance dimension;
2. The relationship between the presence and strength of family connections and Hofstede's individual versus collective dimension;
3. The relationship between individual mobility and Hofstede's Uncertainty Avoidance dimension.

Maritime Clusters and Power Distance

Hofstede's Power Distance dimension is all about hierarchies. High power distance cultures are ones in which there are many ranks and status is important; seniors are obeyed and respected and there is a large "distance" between the common man and the nation's rulers. Low power distance cultures are exemplified by flatter hierarchies; there is more equality between individuals and less distance between "the man in the street" and the power of the nation's leaders.

In a maritime context, this becomes apparent in the differences between those countries where parts of the maritime sector are quite independent and separate from each other, with their own hierarchies and systems and those where the boundaries are far less rigid. A good example of a high power distance culture in this respect is Greece where the hierarchical systems for the Coastguard, Hellenic Navy and administration appointments are quite separate from the shipping industry itself. Italy and Spain share this trait to a lesser extent. In comparison, in the Scandinavian countries, the UK and Netherlands, the boundaries are less rigid and many of these shore-based appointments will come from ex-seafarers. This may in part explain why clustering of shore-based maritime activity is more or less formalised in the various Member States.

¹¹ Hofstede, G. (1991) *Cultures and organisations: Software of the Mind*. London: McGraw-Hill.

Family Connection and Individualism

Hofstede's dimension of individualism versus collectivism refers to the extent to which an individual in society considers himself an integral part of a larger social group or feels independent and autonomous. Oriental cultures are good examples of highly collectivist cultures, in which individuals will relinquish personal rights for the greater good and harmony of the society at large. Classic individualistic cultures are the USA and UK in which the individual's rights are paramount. In these cultures, the "self-made man" is admired whereas in collectivist cultures, such behaviour might be considered arrogant.

In the context of the maritime industry, analysis of the interviews suggests that in certain countries, family connections, especially extended family, are much more important than others. This means that in the more collectivist Member States, it is normal for individuals to use their families to help them gain employment ashore or to move from one position to another. In the more individualistic countries, this chain of contacts is much weaker.

Individual Mobility and Uncertainty Avoidance

The uncertainty avoidance dimension is the extent to which an individual feels comfortable with, or will tolerate uncertainty. High uncertainty avoidance cultures are characterised by structure and procedures, and individuals will be more likely to wish to follow rules and protocols. In low uncertainty cultures, individuals will be more prone to rule breaking, but will also be more flexible with an ability to think creatively in situations of uncertainty.

In the maritime context, it may be that this cultural dimension is responsible for the extent to which individuals are prepared to leave their social environment and work for foreign owners or live in foreign countries. For example, it was noted in the interviews that Italian seafarers will not usually seek to work overseas. Although Greece certainly exports its maritime expertise, it is often by setting up a community overseas, such as the Greek ship owning community in the city of London. On the other hand, individuals from countries like the UK, the Netherlands and Poland are more likely to be prepared to "emigrate" to find job opportunities in other places. In this context, there would appear to be a link between the two dimensions of mobility and family connections. Clearly in countries that are both collectivist and high on uncertainty avoidance, this feature will be reinforced.

The figures on the following pages illustrate the position of each Member State for the relationships described. Unfortunately, because information on Poland and Latvia was not available, these two countries have had to be omitted. The diagrams show that there are clear cultural differences between the group of southern countries and the northern States. This "group" difference is strongest in the relationship between power distance and maritime clusters, for example, but less so for the other relationships.

Figure 1. Maritime Clusters and Power Distance.

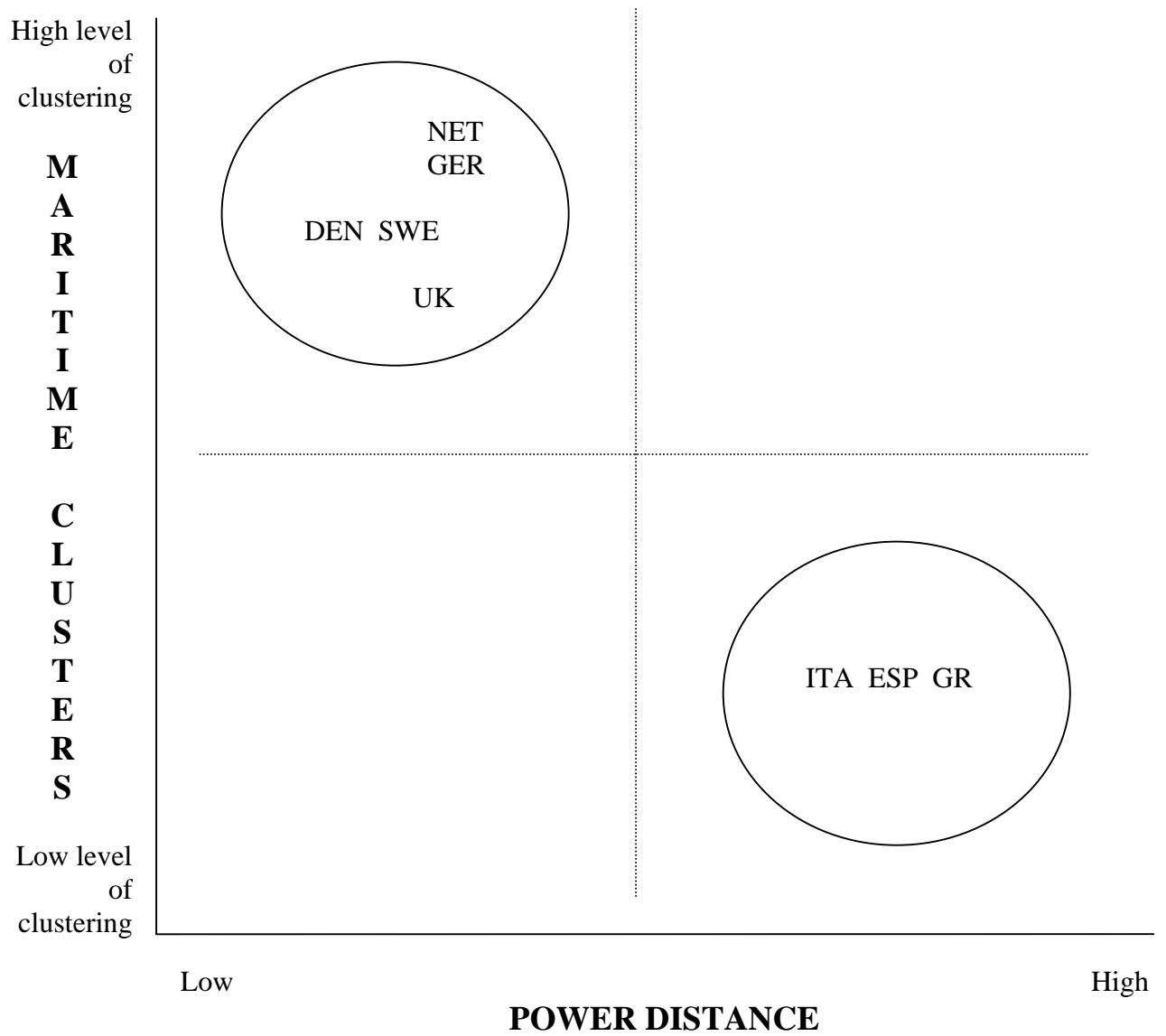


Figure 2. Family Connection and Individualism.

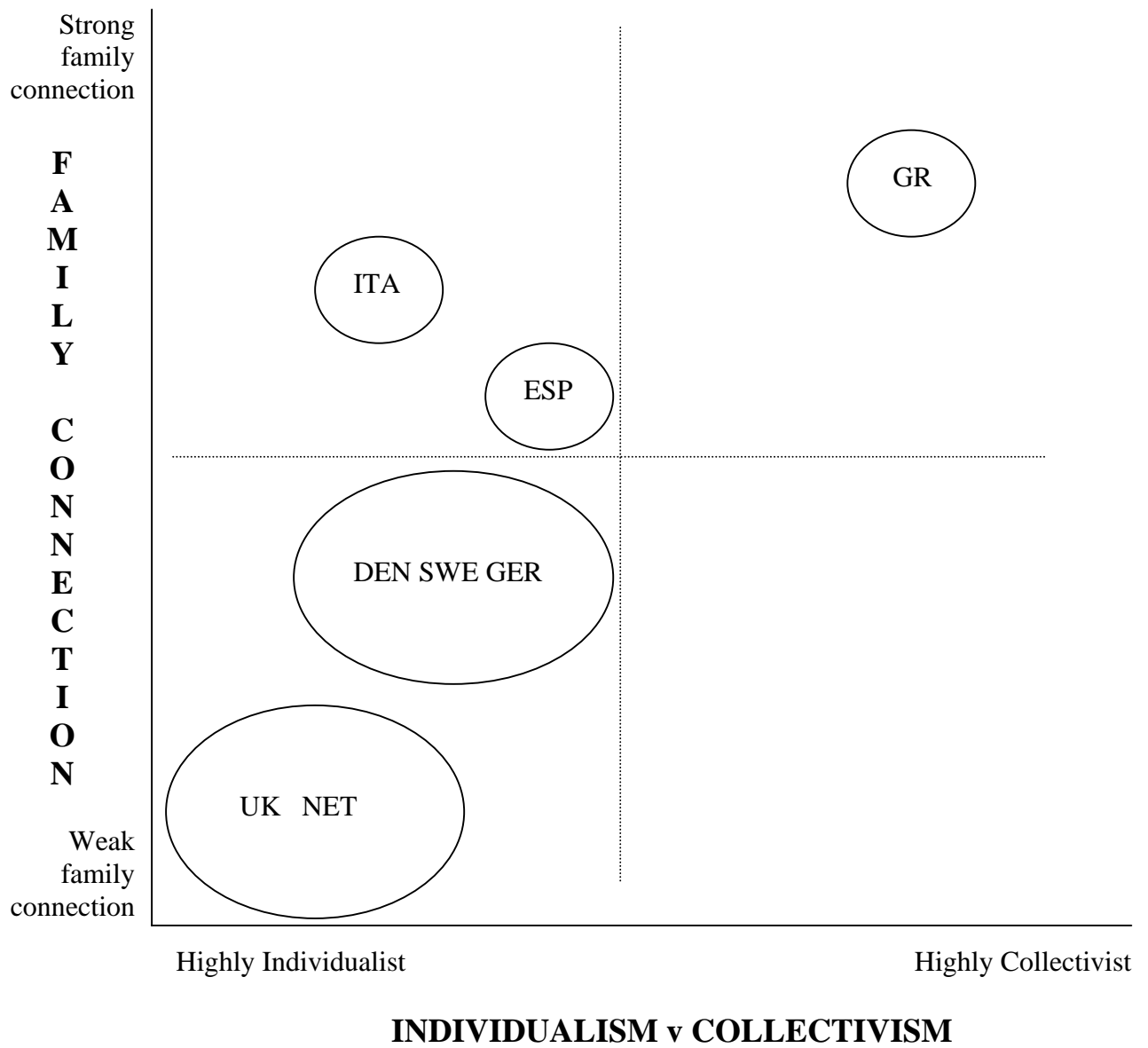
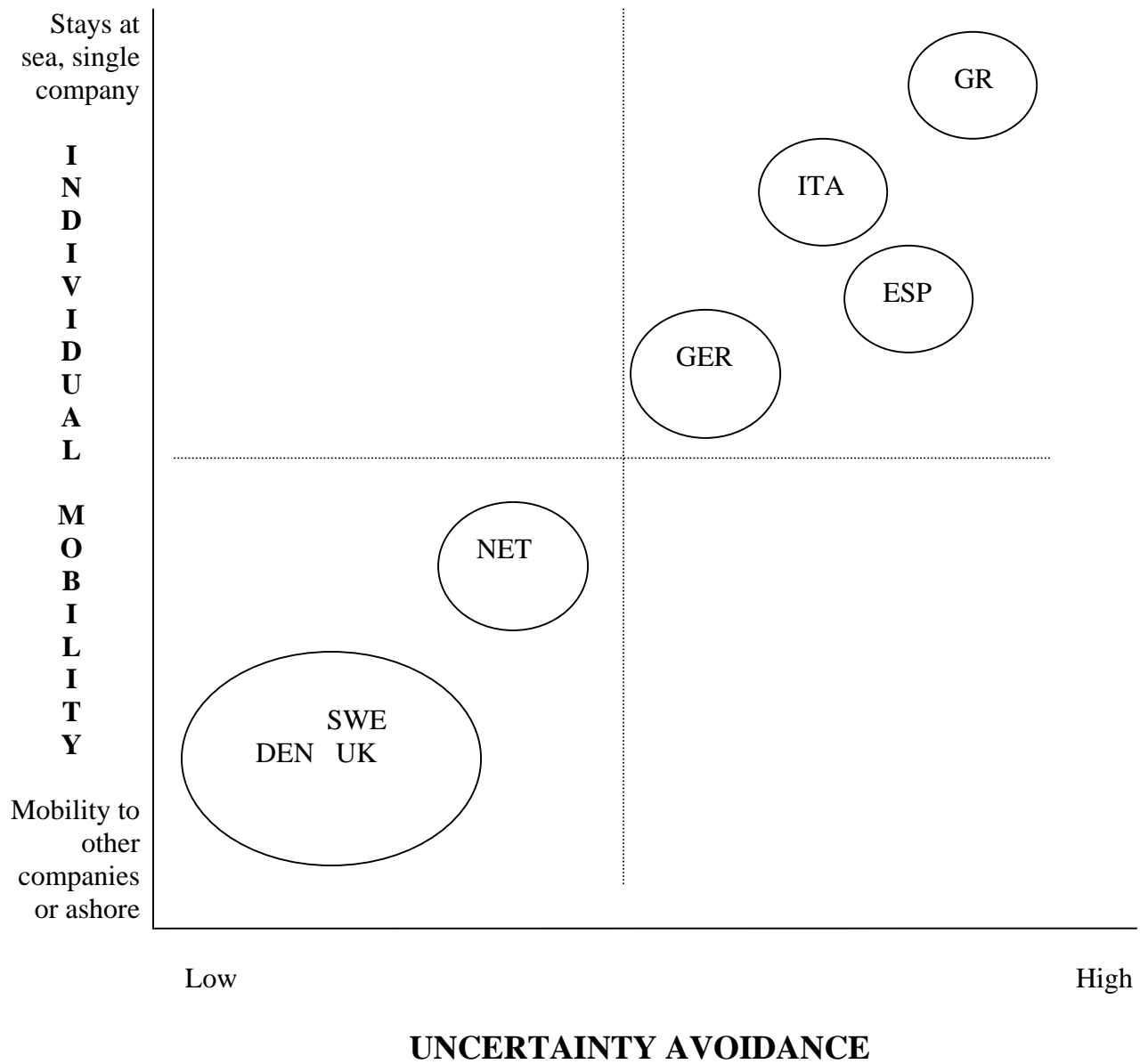


Figure 3. Individual Mobility and Uncertainty Avoidance.



4. Conclusions

The career path maps that have been constructed for each country demonstrate that there is a wide range of possible career opportunities for seafarers ashore. The categories of work are similar across the member states, but the actual career paths taken are a function of the culture of the member state. For example, ex seafaring Engineer Officers enter the power utilities industries in some states, but not in others.

The seafarer manpower requirements are very much a function of the socio-economic climate and social culture within each member state. As mentioned elsewhere, the differences between these systems are quite significant. This can lead to differing requirements for entry into various shore-based sectors. There are some shore-based sectors that are common across all member states as being difficult for seafarers to enter due to the qualification level required. Maritime Law is a good example of a sector in all member states where ex seafarers would need to undertake considerable extra education and training before entry. There are some sectors that are common across all member states, where maritime skills are considered essential, pilotage being a good example of this. However, most shore-based sectors where ex seafarers are seen as desirable, will look to alternative manpower sources to satisfy their requirements if ex seafarers are not available.

Most of our interviewees, although regretting the likely future shortage of seafarers, did not report any particular concerns about meeting their future manning requirements.

The following common barriers to mobility were identified during the course of the study: learned helplessness, lack of opportunity and the lack of a general management qualification for officers. The following barriers to mobility for specific Member States were identified as during the course of the study: progression from rating to officer and the lack of qualifications that may be equated easily with shore qualifications.

In addition to a greater understanding of the issues described above, it was found during the analysis that there were certain interesting similarities and differences between the individual Member States that may have an impact on career opportunities. The similarities that are common to all the Member States relate to the nature of seafaring as an occupation, the reasons for employment change, and the processes that seafarers undergo, as a consequence of their occupation. There are also a number of common factors that are markedly different in each Member State. These factors are a function of the cultures of the individual country. A comparison between these maritime dimensions and known dimensions of culture also reveals some interesting relationships:

These factors and relationships affect the way a maritime industry, or a cluster of different sectors, develops in individual countries. Although there may be common solutions to some of the issues of modern European shipping, for example, in the way career opportunities may be promulgated to young people, or in the harmonisation of MET systems, this study concludes that because of the individual socio-economic situation and culture of each Member State, the development of strategies to improve seafaring and shore-based maritime careers has to be done within these parameters for

each State. It is hoped that this study has made a contribution to the understanding of those parameters and that individual Member States will be able to learn from each other where it is appropriate, but also to resolve the issues that affect them within their own distinctive maritime and national cultures.


Acknowledgements

The authors wish to acknowledge the support and assistance of the following: Mr Alfons Guinier (ECSA Secretary General), Mr Tim Marking (ECSA Deputy Secretary General) and Sonia Karassavidou (ECSA), Mr Eduardo Chagas and Catherine Szyszko (ETF) and Brian Orrell of UK NUMAST. The project was funded by the European Commission and could not have been completed without the generous assistance given by the many interviewees who participated in each country.

Dedication

This paper is dedicated to the memory of Gunther Zade (1936-2006), Editor of the World Maritime University Journal, who did so much to promote the maritime profession.

Appendix 1: Maritime Industries Career Path Mapping

 = Qualification requirements and Costs

