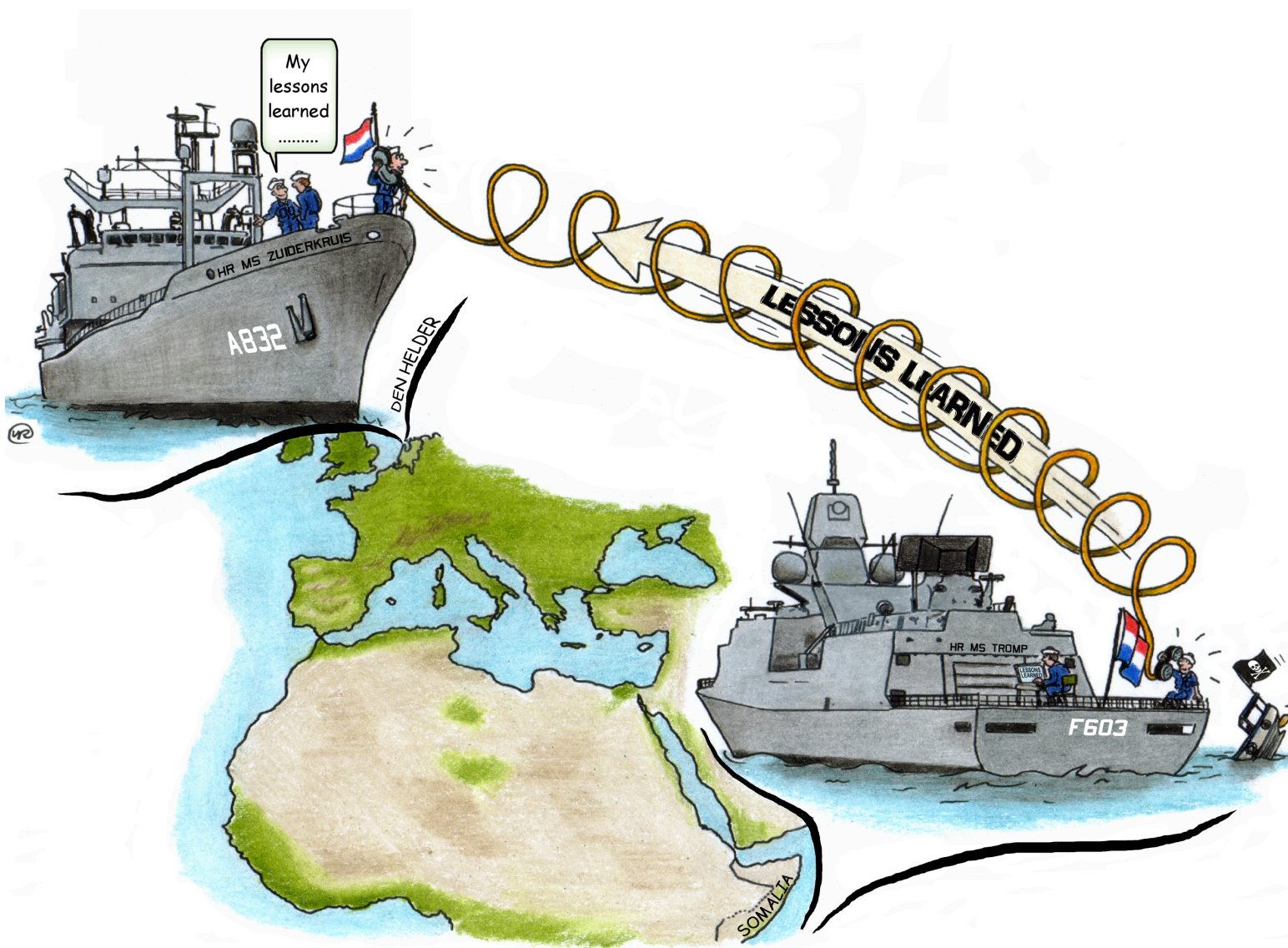


Transfer of Lessons Learned at the Dutch Navy

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Preface

In order to finish my master in Public Administration with a specialization in Public Safety Governance, I conducted a research for the Dutch Navy, which was commissioned by TNO, location Soesterberg. By finishing this master thesis, my great years of study are over and at hindsight those years were wonderful. During these years I gathered a lot of knowledge, both formal and informal. Formal knowledge was collected by attending college and executing assignments. Most social skills were gained informally by being a member of a student corps, sport clubs and hanging out with friends.

The process of writing my master thesis was not always easy and starting with a forty-hour workweek did not contribute to a rapid completion. But with some persistence the result of this process lies in front of you. To a large extent my master thesis has been facilitated by a number of TNO employees and by my supervisors of the University of Twente, to whom I am very grateful. Concerning TNO, I would like to thank my supervisor Josephine Sassen - van Meer in the first place; she has been very helpful, showed me often the bigger picture and gave me useful feedback on the graduation process. Furthermore I had a great support from several employees of TNO who spent time to discuss different subjects. Therefore I want to thank Ingrid van Bommel, Nicolet Theunissen, Martin van Schaik and Sylvie Boermans. Without my supervisors, Guus Meershoek and Marsha de Vries, of the University of Twente, the result of my master thesis would have been different. Especially I want to thank Guus Meershoek for the feedback moments. I will miss our discussions and the confusing moments that came up into my mind a couple of hours after we talked. I also want to thank Wim Rietkerk who has drawn the great picture shown on the front page of this master thesis. Next to it, I want to thank my friends and parents for their patience and support. My father was very helpful in reading my thesis from his point of view, he gave me useful feedback and corrected my English. Thank you dad.

Last but not least, my graduation became more pleasant due to the enjoyable times with colleagues of the TNO department 'Training and Performance Innovations'. Because of them and my experiences at TNO I discovered that I was ready for having a real grown-up job.

Executive Summary

Knowledge is of growing value for organizations. In the expeditionary nature of today's missions, which entails a higher complexity and ever-changing environments and conditions, the need for effective and relevant information from and towards the mission area is essential. It is important that the Dutch Navy continues to learn by capturing, transferring and building upon knowledge because not doing so might have lethal consequences. Lessons Learned are an important part of this knowledge because they entail both implicit and explicit knowledge gained from experiences. To learn as an organization these Lessons Learned must be transferred to other Dutch Navy personnel, especially to the crewmembers that are going on a new mission, and be stored in order to have these Lessons Learned available at a later point in time.

By assessing the current situation on the transfer of Lessons Learned, by examining how marine personnel thinks about the way in which Lessons Learned are transferred and by identifying possible causes for not optimally sharing Lessons Learned, this study might contribute to the improvements of the transfer of Lessons Learned.

To contribute to an enhanced knowledge transfer capability in current and future situations, the recommendations below could be taken into consideration.

1. a) Providing feedback on suggested Lessons Identified;
b) Writing procedures for the feedback of Lessons Identified;
2. Spread awareness of the Lessons Learned database;
3. Facilitation of informal knowledge transfer.

These recommendations are a result from the conclusions drawn from this study. The problems related to the transfer of knowledge and causes of these problems are briefly clarified below. (1) Crewmembers do not get feedback on Lessons Identified provided, resulting in a possible lack of willingness to provide new Lessons Identified. A not optimal execution of the process of the transfer of Lessons Learned at the Dutch Navy might be a cause of this insufficient feedback. (2) The Lessons Learned database is hardly used, because most crewmembers do not know the existence of such a database. Consequence is that crewmembers are not aware of existing Lessons Learned, which is of course undesirable. The gap between organizational learning and knowledge management might be seen as a cause of this problem. (3) Lessons Learned are mostly transferred informal with colleagues from their own vessel due to the strong social networks within the Dutch Navy. A negative consequence of informal transfer of Lessons Learned is that these lessons are not stored and therefore not available for those concerned.

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1 Introduction

After the Cold War, a lot has changed in military operations and thinking about military operations. In the twentieth century, until 1990, the defense of Dutch territory and of its NATO allies was the central activity of the Dutch military. In those times there were hardly any doubts about the origin of the enemy or about the characteristics of the theater in which the battles were fought. This has been changed after 1990 when there was a slow shift towards crisis management operations, which entails political, military and civil activities in order to prevent, control and solve conflicts (Dictaat Militaire Operaties-II, 2009). Most crisis management operations are peace support operations, where the military force is used to support the process towards peace. Today's missions include mostly asymmetric action; the absence of a common basis of comparison in respect to capability of the warring factions (Meigs, 2003). Some characteristics of the wider scenario, which entail irregular warfare, are: the style is nonstandard for the regular forces, warfare is waged in order to win the 'hearts and minds' of the local people and the defeat of the irregular enemy is not at the heart of the issue, culture matters greatly, military behavior must be conducted for its political effect and intelligence is an important source in this kind of warfare (Gray, 2007).

Operations in which the Dutch Navy anticipates have changed as well. It is no longer the way Sir Julian Corbett stated in 1911 that 'we fight on sea to eventually win on land'. Nowadays the three main tasks of the Marine contribute to safety on sea, safety from sea and national maritime security, such as search and rescue (Defense, 2011). This thesis focuses on safety on sea, specifically on anti-piracy missions. There are three aspects that make anti-piracy missions complicated. First, there is a need for a surveillance capability that is sophisticated and extensive. Second, a legal authority must allow the search and, if necessary, detention of the ships on which pirates accommodate. Third, international cooperation and coordination is essential (Murphy, 2008). While missions become more complex, this has an effect on military personnel participating in these kinds of operations.

Military personnel is working in exotic environments under varying conditions with variable partners and in complex situations. In addition, in times of economic crises and budget cuts, increasing pressure lies on training time, resources and staffing for these missions. This includes Dutch Navy personnel participating in foreign missions. In the expeditionary nature of today's missions, which entails a higher complexity and ever-changing environments and conditions, the need for effective and relevant information from the mission area is high. For these reasons it is important that the Dutch Navy organization focuses on and facilitates the transfer of knowledge.

Knowledge is of growing value for organizations. Johannessen (2001) identifies a shift from an industrial society to a knowledge-based society, where an increased focus lies on knowledge as the most important resource for organizations. It is important that an organization continues to learn by capturing, transferring and building upon knowledge in order to achieve competitive advantages (Trainor, Brazil & Lindberg, 2008; McDermott, 1999; Nonaka & Takeuchi, 1995). Sharing knowledge is even more important for the military because not doing so can have lethal consequences (Trainor et al, 2008). Postma (2011) points out that the ability of the military to share knowledge is the key to success in complex and changing environments. Despite the investments of the Dutch Army in transferring knowledge and experiences of military personnel, it seems hard to optimally utilize this

knowledge (Blaas, 2008). Investments were partly on information technology, which provides opportunities to share and build knowledge. Trainor et al (2008) mention that 'perhaps the most significant challenge today is to recognize that there is a need for and benefit from sharing and building knowledge within the organization of the military'.

In the Dutch Navy the transfer of Lessons Learned, as a specific form of knowledge transfer, is a much-discussed topic. The Navy is thinking about a way to support and present Lessons Learned in order to prepare military personnel for a specific mission. A good way of transferring Lessons Learned might offer many operational advantages.

By assessing the current situation on the transfer of Lessons Learned and by examining how marine personnel thinks about the way in which Lessons Learned are transferred, this study tries to contribute to the improvements that might be made to the transfer of Lessons Learned.

1.1 Context of this study

TNO in collaboration with the Dutch Army started in March 2011 a project called Sustainable Mission Preparation. The purpose of this project is contributing to the optimal adaptive ability of a soldier during mission preparation. The premises of the project are the five dimensions (cognitive ability, mental balance, self-awareness, physical fitness and mission specific knowledge) of adaptability and the use of current information technology. On this basis a conceptual development has been made of an innovative and above all practical learning-environment. It is intended that, in this environment, a soldier can test his¹ own extent of adaptability and improve this adaptability.

This study contributes to the body of research that is currently being done on the five dimensions of adaptive ability. Mission specific knowledge is one dimension of this adaptability and this thesis will contribute to the required research for this dimension. A soldier must be flexible in absorbing relevant mission specific knowledge in order to be prepared for the mission concerned. The challenge is, to improve the effectiveness and efficiency of knowledge transfer and to avoid getting overwhelmed by irrelevant and out dated information. Problems, for which a solution already exist, might be addressed and solved more efficiently.

1.2 Research questions

The process of knowledge transfer is often seen from the management point of view. This study investigates the problems in the transfer of knowledge from the point of view on the work floor, the operational military employees. In order to assess whether improvements might be achieved in the transfer of knowledge, the current situation will be reviewed as well.

This study is conducted within the Dutch Navy, with a specific focus on crewmembers of vessels that have been on anti-piracy missions or were, at the moment of this study, on such a mission. Participants in this study are crewmembers of Hr. Ms. De Ruyter, Hr. Ms. Tromp and Hr. Ms. Zuiderkruis.

¹ Where his is written, it can equally be read as her.

The central question in this study is: What is the current situation with regard to the transfer of Lessons Learned within the Dutch Navy of personnel who have been sent, or will be sent, on a mission and what are the problems and causes of these problems in the transfer of Lessons Learned?

This central research question will be answered by using six detailed research questions. The first three questions are answered by a literature study on knowledge transfer. Interviews and a questionnaire are used to give an answer on the last three research questions.

1. How can knowledge be transferred in an organizational setting?

The first research question includes the way in which employees in general transfer knowledge. To answer this question, at first, the differences between data, information and knowledge are outlined. In order to understand knowledge transfer, a distinction has been made between implicit and explicit knowledge. This distinction is important due to the different ways in transferring these two kinds of knowledge. Besides the distinction between implicit and explicit knowledge a difference in formal and informal knowledge transfer has been made as well.

2. In what ways can the transfer of knowledge be supported by an organization?

This research question elaborates the different ways in which an organization can support knowledge transfer. Both formal and informal ways of supporting knowledge transfer are described.

3. What can be causes of problems in transferring knowledge in an organizational setting?

The problems that exist or the problems that employees experience in knowledge transfer are expounded by answering this research question. The causes of problems in knowledge transfer are divided into four subjects, namely social networks, organizational culture, trust and the relation between knowledge management and organizational learning.

4. How do crewmembers, working at the fleet of the Dutch Navy, transfer Lessons Learned?

This research question focuses on the transfer of Lessons Learned as a specific form of knowledge transfer. The way in which crewmembers of the Dutch Navy transfer Lessons Learned are described by using questionnaires and interviews.

5. In what way does the Dutch Navy provide assistance in the transfer of Lessons Learned?

The Dutch Navy is using a Lessons Learned database to store and distribute Lessons Learned. The process in which the Dutch Navy provides assistance in the transfer of Lessons Learned is described in answering this research question.

6. What are causes of problems in the transfer of Lessons Learned at the Dutch Navy?

The causes of problems in knowledge transfer, described by answering the third research question, are compared with the situation at the Dutch Navy. By using interviews and questionnaires the four concepts, social networks, organizational culture, trust and the relation between knowledge management and organizational culture are related to the process of Lessons Learned at the Dutch Navy.

By answering these research questions the current situation and the way marine personnel is thinking about transferring Lessons Learned are described. This information might contribute to improve the transfer of Lessons Learned at the Dutch Navy.

1.3 Thesis overview

The research questions in section 1.2 are answered in different chapters. In this section a schematic overview of the different research phases is presented in order to provide a clear illustration of the concepts that are covered in this study.

Before outlining the literature phase, chapter two describes the research methodology that is used to get an answer to the different research questions. The research methodology is especially relevant for the research questions four, five and six, while these questions are answered using a field study at the Dutch Navy.

The first phase is called the literature phase and consists of knowledge transfer and the problems of knowledge transfer. Chapter three describes knowledge transfer of employees, starting with the definition of knowledge and describing the different types of knowledge. Different types of knowledge demand different kinds of knowledge transfer. Using the model of Gilbert and Cordey-Hayves, the process of knowledge transfer will be described. Finally the ways in which an organization could support knowledge transfer are outlined. The first and second research questions are answered in this chapter. In chapter four, literature on the problems that relate to knowledge transfer will be explained in order to answer the third research question. This chapter focuses on describing why social networks, trust, organizational culture and the relation between knowledge management and organizational learning could be enablers or barriers to knowledge transfer.

The second phase is the field study phase in which interviews and questionnaires are used to get answers to the research questions. Chapter five describes the way in which Dutch Navy personnel is transferring their Lessons Learned in terms of data analyses, questionnaires and interviews. In addition to the questionnaire, interviews were held to get more information about the Dutch Navy as a learning organization and to get information about the way the Dutch Navy facilitates in the transfer of Lessons Learned. Chapter five presents the answers on the research questions four and five. Chapter six provides an answer on the sixth research question by describing the problems and the causes of these problems related to the transfer of Lessons Learned at the Dutch Navy.

In chapter seven, the conclusion and discussion of this study is outlined. Chapter eight covers recommendations to optimize the process of the transfer of Lessons Learned at the Dutch Navy.

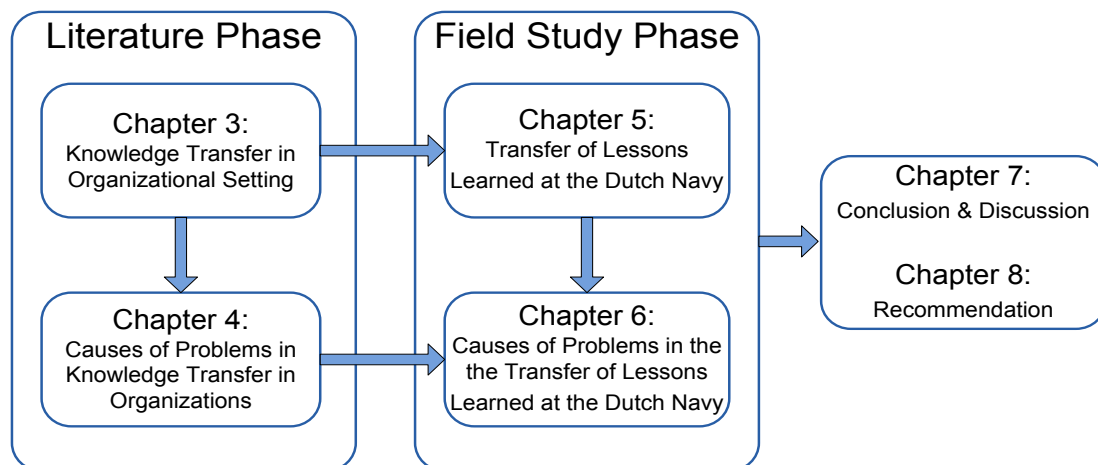


Figure 1.1 Schematic overview thesis

2 Methodology

Both literature study and field research are part of this thesis. As visualized in chapter one, in chapter three and four, literature is used to answer the first three research questions and in chapter five and six the interviews and questionnaire are used to answer the last three research questions.

2.1 Literature study

A literature study has been conducted to get an answer on the first three research questions; 'How can knowledge be transferred in an organizational setting', 'In what way can the transfer of knowledge be supported by an organization' and 'What can be causes of problems in knowledge transfer in an organizational setting'. The databases that were used to conduct this literature study are 'Scopus', 'PiCarta' and 'Google Scholar'. Also the catalogue of the library of the University of Twente, the library of the Dutch Police Academy, the library of the NLDA (Netherlands Defense Academy) and the digital library of TNO were consulted. The following queries were used for searching in these databases and catalogues: 'knowledge', 'learning', 'experience', 'knowledge transfer', 'knowledge management', 'learning organization', 'lessons learned', 'barriers of knowledge transfer' and 'process of knowledge transfer'. These queries were also used in combination with each other. By reading the summary of an article a first indication of relevance was given. An article was found relevant when the article contained information on the way individuals transfer knowledge, what can be barriers or enablers in knowledge transfer and in what way organizations can facilitate knowledge transfer. The number of times an article was cited is also taken into account. To find the most important articles, the results of the search were sorted on subject as well as on the number of times an article was cited. Sorting on the number of times an article was cited resulted in some books and articles that were written by prominent authors. The overall search resulted in around forty relevant scientific journal articles, books, research reports, technical reports and master theses. The most relevant articles of this search have been read and the relating references were checked.

2.2 Field research

A field research is done in order to get an answer on the last three research questions; 'How do crewmembers, working at the Dutch Navy, transfer Lessons Learned', 'In what way does the Dutch Navy provide assistance in the transfer of Lessons Learned' and 'What are causes of problems in the transfer of Lessons Learned at the Dutch Navy'. Field research can be distinguished into qualitative and quantitative research. Qualitative research is carried out to get in-depth information about the transfer of Lessons Learned and to formulate the questions in the questionnaire, which was set out at naval forces of the Dutch Navy. In order to get the necessary information the research method 'qualitative interviewing' is used. The questionnaire, quantitative research, is done to reach the number of respondents that enables to conclude something about the way personnel of the Dutch Navy transfers Lessons Learned. The questionnaire is also anonymous and therefore less sensitive for socially desirable answers (Baarde and de Goede, 2001).

2.2.1 Participants

Qualitative Interviewing

Seventeen crewmembers (n=17) of the Dutch Navy vessel Hr. Ms. De Ruyter were interviewed in seven interview sessions with different group sizes. These groups varied from one till four and these crewmembers differ in gender, age, rank, year of service (appendix 2) and service section (table 4.1). Two interviews were conducted with the 'Chief of Service' exclusively. Each vessel of the Dutch Navy has different 'service sections': 'operational service', 'logistic service', 'technical service', 'technical weapon service' and a 'marine corps'.

Questionnaire

The questionnaire was sent out to around 400 crewmembers of the vessels Hr. Ms. Tromp and Hr. Ms. Zuiderkruis of which each of these vessels have around 200 crewmembers. The exact number cannot be determined with certainty because this number is confidential. A total of 81 crewmembers (n= 81) completed the questionnaire (72 male and 9 female, with an average age of 34 and a standard deviation of 9,8).

Taken these two vessels separately this results in a number of 62 crewmembers of Hr. Ms. Tromp (53 male and 9 female, with an average age of 32 and a standard deviation of 9,5) and 19 members of Hr. Ms. Zuiderkruis (19 male and 0 female, with an average age of 40 and a standard deviation of 7,9) that filled in the questionnaire. In table 4.1, the characteristics of the participants are presented in more detail. In this table the different ranks and different service sections are mentioned, including the number of participants. The mean and standard deviation are calculated in relation to the years of experience on current position, years of experience on anti-piracy missions and years of service at the Dutch Navy.

		Hr. Ms. Tromp	Hr. Ms. Zuiderkruis	Total
Rank	<i>Officer²</i>	11 (17,7%)	9 (47,4%)	20 (24,7%)
	<i>Non-commissioned officer³</i>	15 (24,2%)	10 (52,6%)	25 (30,9%)
	<i>Crew⁴</i>	36 (58,1%)	0 (0,0%)	36 (44,4%)
Service section	<i>Operational service</i>	12 (19,4%)	9 (47,4%)	21 (25,9%)
	<i>Logistics service</i>	16 (25,8%)	4 (21,1%)	20 (24,7%)
	<i>Technical service</i>	18 (29,0%)	4 (21,1%)	22 (27,2%)
	<i>Weapon Technical service</i>	12 (19,4%)	0 (0,0%)	12 (14,8%)
	<i>Marine Corps</i>	4 (6,5%)	2 (10,5%)	6 (7,4%)
Years of experience on current position		2,32 (SD=1,61)	3,47 (SD=4,49)	2,59 (SD=2,60)
Years of experience on anti-piracy missions		1,71 (SD=0,78)	1,11 (SD=0,32)	1,57 (SD=0,74)
Years of service at the Dutch Navy		12,85 (SD=9,41)	20,72 (SD=9,58)	14,65 (SD=9,96)

Table 2.1 Specification of the respondents

² Officer: Sub lieutenant till Admiral

³ Non-commissioned officer: Sergeant till Warrant-officer

⁴ Crew: Junior seaman till Corporal

2.2.2 Materials & Design

Several interviews were restricted in time. In these interviews the accent was focused on obtaining information with regard to the problems in the transfer of knowledge. The results of the interviews and the literature study have been used to conduct the right questions in the questionnaire and to emphasize the problems. Results of the interviews and quotes of the interviews are also used in this thesis to clarify this study.

Qualitative Interviewing

On forehand a list of topics is formulated as a general plan of inquiry for the interview. Questions were added to these topics not as a specific set of questions to ask but as a possibility to fall back on when the interview is stagnated. The purpose of the interview is to get in depth-information and the most appropriate way is using the method of qualitative interviewing (Babbie, 2004). In appendix 2, the different topics and related questions can be found.

Questionnaire

The questions in the questionnaire were partly different for the two vessels. The crew of Hr. Ms. Tromp filled out the questions about sharing and gathering Lessons Learned, while the crew of Hr. Ms. Zuiderkruis only got questions about gathering Lessons Learned. At the time the questionnaire had to be filled out, the crew of Hr. Ms. Zuiderkruis was at an anti-piracy mission and therefore they did not have the experience yet with sharing their Lessons Learned.

Because the response of crewmembers of Hr. Ms. Zuiderkruis was low (n=17), the answers on the questions in the questionnaire of this vessel are not analyzed without taken into account the answers that were given by crewmembers of Hr. Ms. Tromp. Therefore most of the questions are analyzed using both the answers given by crewmembers of Hr. Ms. Tromp and Hr. Ms. Zuiderkruis (n=81). A response rate of 81 is also resulting in a more reliable outcome of the analysis of the questionnaire.

Both Hr. Ms. Zuiderkruis and Hr. Ms. Tromp went on an anti-piracy mission. The difference between these missions is the command structure. Hr. Ms. Zuiderkruis was during their mission under command of the EU (Operation Atalanta) and Hr. Ms. Tromp was during their mission under command of NATO (Operation Ocean Shield). While the process of knowledge transfer and the transfer of Lessons Learned is mission independent, the kind of mission does not influence the process. Besides, crewmembers are changing every three years in function and are located on different vessels so the results of the questionnaires can be interpreted more widely.

The questionnaire is subdivided into three main categories. The first category consists of questions about personal background, so called demographic information. In the second category, questions about the actual situation on the transfer of Lessons Learned are asked. The third category consists of questions about the opinion of crewmembers towards the transfer of Lessons Learned at the Dutch Navy.

In total three questionnaires have been left out because the answers these crewmembers gave were not realistic. Two crewmembers filled out an age that could not be true. The other person filled out the same answers to all questions. Besides, some questions of the actual situation were left blank by

crewmembers. Leaving the answers to the questions blank could be a result of filling out the questionnaire in a rush.

Most of the questions in the questionnaire were precoded, except some questions in the first category about personal information of the crewmembers and the last two questions, of the third category, about complementary information. The precoded questions are used to get objective information about the way crewmembers transfer their Lessons Learned. A multi-item scale is used in the questionnaire to measure the subjective information of the crewmembers about the way they think about transferring Lessons Learned. A multi-item scale with a five-points Likert-type response format is chosen while this format fits the purpose of this questionnaire. The five points format gives sufficient variation and because of the military culture, too much options will probably have a negative effect on the outcome of the questionnaire. The options of answering the question with a five point Likert format are 'totally disagree', 'disagree', 'neutral', 'agree' and 'totally agree'. Sailors and Corporals have answered the multi-item scale questions often with neutral. There might be different causes for this to occur, for example not wanting to make their opinion explicit or not knowing what answer to fill in. It might be possible that the transfer of Lessons Learned is a hard subject for the sailors and corporals while they do not have to explicitly deal with this subject.

The reliability of the opinions relating to gathering Lessons Learned from colleagues and missed Lessons Learned is measured by using Cronbach's Alpha. When a questionnaire is filled out randomly or answers are made-up this could result in a low Alpha. The internal consistence of the statements relating to opinions about gathering Lessons Learned includes a Cronbach's Alpha value of 0,809 (n of items = 9) without deleting a statement. Also without deleting a statement, the Cronbach's Alpha relating to probable missed Lessons Learned has a value of 0,754 (n of items = 6). In conclusion, the most important statements are internal consistent and therefore reliable while the Cronbach's Alpha is higher than 0,7.

Anonymity is guaranteed while the questionnaire does not ask for the name of the respondent. Besides the questionnaire is not further spread and only used for conducting this research. Anonymity results in more honest responses.

2.2.3 Procedures

Qualitative interviewing

The information specialist of Hr. Ms. De Ruyter selected the participants for the interviews that were held in Den Helder on board of Hr. Ms. De Ruyter. Crewmembers of every service section were selected. With in forehand-asked permission the interviews were recorded and elaborated. In advance, permission has been asked to record the interview. To acquire sincerity and maximum input the names of the interviewees will not be mentioned and the content of the interview will only be used for this thesis. A summary of these interviews, without mentioning the interviewees can be found in appendix 2.

The average length of the interviews was forty-one minutes. The duration of the longest interview was one hour and seven minutes. The shortest interview took twenty-three minutes. Detailed information about duration of the interviews can also be found in appendix 2.

Questionnaire

Hr. Ms. Tromp went on an anti-piracy mission from March till June 2011 and Hr. Ms. Zuiderkruis from September till December 2011 (see appendix 1). The questionnaires were sent to both vessels in the beginning of September 2011; at that time Hr. Ms. Zuiderkruis was on anti-piracy mission.

There was no validated questionnaire available with regard to knowledge transfer that was useful for this research. Therefore, the questions in the questionnaire were formulated using the interviews and literature research. At first different subjects were chosen that should be included in the questionnaire. Examples of subjects are 'communication', 'contact', Lessons Learned database' and 'trust'. For each subject, questions were formulated and subdivided into questions about personal facts, gathering and sharing Lessons Learned and opinions of gathering and sharing Lessons Learned. The questions represented in the questionnaire are related to the knowledge transfer model and to the problems that might occur in knowledge transfer. After the questionnaire was finished, experts with knowledge on Defense research in combination with knowledge about formulating questionnaires reviewed the questionnaire.

The Net Questionnaire program is used to design the questionnaires and to send the questionnaire to the commanders of the two vessels. They have been contacted in advance about further spreading these questionnaires towards the crewmembers of both vessels. After one and an half month and repeatedly contact with the point of contact at Hr. Ms. Tromp, eleven crewmembers filled out the questionnaire. This number is a too low response rate and therefore the questionnaires of Hr. Ms. Tromp were sent in hard copy and distributed while they were on a training mission towards Norway. This resulted in a response rate of 62 questionnaires.

The questionnaire designed for Hr. Ms. Zuiderkruis could not be opened by the crewmembers, as not every computer on Hr. Ms. Zuiderkruis had a connection with the Internet. Therefore the questionnaire was redesigned in word using fixed answer options. Sending a hard copy of the questionnaire towards Hr. Ms. Zuiderkruis was not possible and as they were at their mission and relatively busy, the response rate of the crewmembers stayed relatively low (n= 19).

2.2.4 Reflection on used research methods

As described in this chapter the research methods (questionnaires and interviews) are used to answer the research questions. The interviews are complementary to the questionnaire because the experiences acquired during the interviews are used to create the questionnaire. In-depth information gathered from the interviews is also used to clarify the results of the questionnaire by using examples.

Conducting interviews might have the disadvantage that the person who conduct the interview interprets the answers given by the interviewee differently. Another disadvantage could be the fact that the behaviour of the interviewer might influence the answers of the interviewee. At last, an interview is not anonymous, which might result in social desirable answers of the interviewee. The following actions were taken in order to minimize the disadvantages of using interviews: the interviews were recorded in order to minimize the interpretations of the interviewer; the questions asked consisted of only objective information to minimize the influence of the interviewer; and preliminary to the interview, the interviewee has been informed that the results of the interviews are not matched to his identity to minimize social desirable answers. On the other hand, an advantage of using interviews is the amount of information given by the interviewee because there is a possibility to ask for an explanation or to ask supplementary questions. Another advantage is that the interviewee will answer every question while the interviewer can guide the process.

Questionnaires have the disadvantage that not everyone is filling out the questionnaire because there is no direct pressure. Another disadvantage lies in the fact that it is not for sure that the person who filled out the questionnaire has done this honestly and precise. Self-determination of the moment or environment in which a person fills out the questionnaire can be either an advantage or disadvantage. For example, choosing a crowded moment or a moment where other persons also fill out the questionnaire might influence the outcome of the questionnaire negatively. Choosing a quite moment might result in more honest answers. An advantage of using questionnaires is the large amount of people that can be reached. Furthermore, labor intensity is low while it does not take much time to fill out a questionnaire. Another advantage is the anonymity of the questionnaire that might result in less social desirable answers.

3 Knowledge transfer in an organizational setting

'In an economy where the only certainty is uncertainty, the one sure source of lasting competitive advantage is knowledge' (Nonaka and Takeuchi, 1995).

Not only must knowledge be created, it must also be transferred to take advantage of it. This chapter describes the ways in which knowledge is transferred in organizations. The research questions '*How do employees transfer knowledge in an organizational setting?*' and '*In what ways can the transfer of knowledge be supported by an organization?*' will be answered in this chapter.

3.1 What is knowledge?

There is a large volume of published studies describing the role of knowledge in organizations, whereby in almost every study the definition of knowledge is described. Before analyzing how knowledge is transferred it is important to know exactly what is meant by knowledge. A clear definition of knowledge helps to answer the main research question because in order to improve knowledge transfer there must be awareness that the type of knowledge relates to the way in which it is transferred.

A simple definition of knowledge is given to emphasize that knowledge is primarily personal. Alavi and Leidner (1999) define knowledge as 'a justified personal belief that increases on individual capacity to take effective action'. In this context, action requires physical skills and competencies, cognitive/ intellectual activity or both.

Davenport and Prusak (1998) have written the most relevant definition of knowledge for this thesis and they were cited over 10.000 times. Knowledge is defined as a 'fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the mind of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices and norms' (Davenport and Prusak, 1998).

3.1.1 Data, information, knowledge

The way in which information is related to knowledge can be explained in some form of progression. This progression begins with raw data, and taking in information and knowledge. In figure 3.1 this progression is displayed. Data become information when meaning has been added to the data and when data are processed for a purpose. In short, information is data with a context and knowledge is information with an application orientation. For information to become knowledge, people make interpretations, apply rules, and create knowledge (Seng, Zannes & Pace, 2002; Edwards & Kidd, 2003). The distinction between data, information and knowledge can be made clear by using the example of a traffic light. Data is send to a traffic light so the lights become green, yellow or red. Someone in front of the traffic light sees that the light is for example green (this is information). Knowing that the green light means that you can start driving is knowledge.

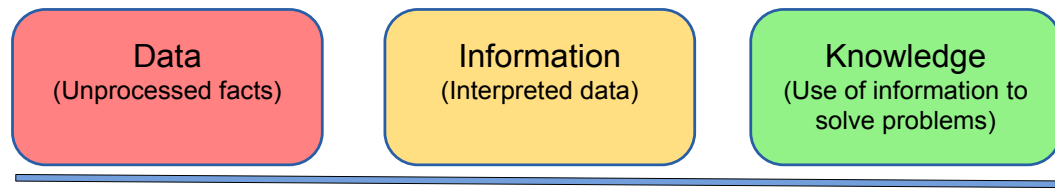


Figure 3.1 Data-information-knowledge progression

According to Weggeman (2000) knowledge is personal and information is available for every person. The statement of Weggeman that knowledge is personal is illustrated by an example of Edwards and Kidd (2003). If for example Henk and Ingrid⁵ use the same or similar enough models of the world and information flows from Henk to Ingrid, indeed knowledge is transferred to Ingrid due to the automatic operation of their joint mental-processing model. When Henk and Ingrid do not share the same model then information flowing from Henk to Ingrid may lose its context and thus only be perceived as data or information by Ingrid.

In addition to the distinction between data, information and knowledge by Seng et al (2002) and Edwards and Kidd (2003), McDermott (1999) gives six characteristics to distinguish knowledge from information:

1. Knowledge is a human act;
2. Knowledge is the residue of thinking;
3. Knowledge is created in the present moment;
4. Knowledge belongs to communities;
5. Knowledge circulates through communities in many ways;
6. New knowledge is created at the boundaries of old knowledge.

1. Knowledge is a human act

Knowledge is in the minds of people and information has to be used by humans in order to become knowledge. 'To know a city is to know its streets, not as a list of street names or a map, but as a set of sights and routes useful for different purposes' (McDermott, 1999). Humans combine information, consider on their experience and use this information and experiences to solve problems.

2. Knowledge is the residue of thinking

Thinking about a problem might result in knowledge. 'Knowledge is experience that we have reflected on, made sense of, tested against other's experience' (McDermott, 1999). It is the knowing of the different routes to take, in order to reach work as fast as possible at different points in time.

3. Knowledge is created in the present moment

Knowledge is not always easy to articulate. Mostly, it becomes visible when a problem must be solved or when a question is asked. When a solution must be found, it can include new insights and / or it can include old ones. 'Insights from the past are always mediated by the present moment, the living act of knowing' (Senge, 1990).

⁵ Henk and Ingrid are chosen as examples; it can be any other names instead.

4. Knowledge belongs to communities

When we are born we don't know anything, but the world is full of knowledge. Individuals don't collect knowledge fully by themselves but learn from other people. 'We learn by participating in communities and come to embody the ideas, perspective, prejudices, language, and practices of that community' (McDermott, 1999).

5. Knowledge circulates through communities in many ways

It is not only written knowledge that circulates through communities, like textbooks, articles and procedures. Besides written knowledge there also exist unwritten knowledge, like: routines, tools, work products, machinery, stories, specialized language and common wisdom about cause-effect relationships (Foucault, 1975 in McDermott, 1999). McDermott (1999) mentions that most knowledge circulates through communities in an informal way. When this knowledge is transferred informally, people are not always aware of the knowledge they share.

6. New knowledge is created at the boundaries of old knowledge

When new knowledge is created it implies old knowledge. In learning there is also a matter of using something you already know to generate new ideas, facts, or tools. 'The everyday practice of professional work involves thinking that draws from experience and current information' (McDermott, 1999).

McLure Wasko and Faraj (2000) suggest that there are three main perspectives of knowledge, namely knowledge as an object, knowledge embedded in people and knowledge embedded in a community. In this thesis knowledge is embedded in the last two perspectives.

3.1.2 Explicit and Implicit knowledge

"If we only knew what we know." - O'dell & Grayson

Knowledge can be distinguished into implicit and explicit knowledge. This section describes the differences between these types of knowledge. It is important to have a clear distinction between implicit and explicit knowledge because 'the type of knowledge to be transferred influences the best method of transfer' (Barret & Snider, 2001, p 9). Thus, by answering the question 'how can the transfer of knowledge be improved' these different types of knowledge are important to outline.

Explicit knowledge can be embedded in procedures or represented in documents or in databases. This kind of knowledge is easy to communicate, store and distribute. It is the 'knowing about' something. Implicit knowledge, on the other hand, is considered complex, difficult to verbalize, codify or document in writing. This kind of knowledge represents ideas that are floating in someone's head. It is associated with experience and can be seen as 'knowing how' (Seng, Zannes & Pace, 2002; Argote & Ingram, 2000; Connell, Klein & Powell, 2003; Barrett & Snider, 2001, p 10).

The diagram of Weggeman (1997, p 36), shown in table 3.1, is used to give a schematic view of the two different types of knowledge.

Explicit knowledge	Implicit knowledge
Codified knowledge	Tacit knowledge
Information embedded in theories, formula, procedures, handbooks, drawings and diagrams. It is about knowing and understanding.	Experiences, skills and attitude. It is about capacity, ability and willingness.
Transfer by education	Sharing by demonstration
Available by studying	Available by copy and imitate in processes of socialization

Table 3.1 Distinction between explicit and implicit knowledge

In order to transfer implicit knowledge, the knowledge must be made explicit. Bereiter (2002) distinguishes six components of personal knowledge of which, according to his point of view, 'implicit understanding' cannot be made explicit. 'Implicit understanding' is the knowledge of experience in daily and working life. It cannot be made explicit because it concerns the part of personal knowledge of which we are unaware but it will always influence the overall personal knowledge. The other components, which can be made explicit, are 'statable knowledge' (objective, abstract knowledge); skills; episodic knowledge (analogy, sudden connections and associations); 'impressionistic knowledge' (feeling and impressions which influence our actions); and 'regulative knowledge' (meta-cognitive knowledge and skills). 'Statable knowledge can be separated by way of explanation, episodic knowledge by telling stories, impressionistic knowledge by expression of language and gesture, skills by demonstration and coaching, and regulatory knowledge by examples, reflection and feedback' (Bereiter, 2002).

3.2 Knowledge transfer

'Knowledge transfer in organizations is the process through which one unit is affected by the experience of another' (Argote, Ingram, Levine & Moreland, 2000). At first the process of knowledge transfer is described by using an adapted model of Gilbert and Cordey-Hayes (1996). Secondly, the types of knowledge are outlined using the learning cycle of Nonaka and Takeuchi (1995). The last part of this section describes the mode of knowledge transfer by explaining the difference between formal and informal learning.

3.2.1 Process of knowledge transfer

In this subsection the knowledge transfer process is described by using the conceptual framework for knowledge transfer of Gilbert and Cordey-Hayes (1996).

Gilbert and Cordey-Hayes (1996) developed a model that describes the process of knowledge transfer (figure 3.2 shows a derived version of this model). Besides knowledge transfer between individuals, this model reflects on organizational learning by denominating the core routines of an organization in this model. Organizational learning is the result of well functioning knowledge transfer, which includes assimilation.

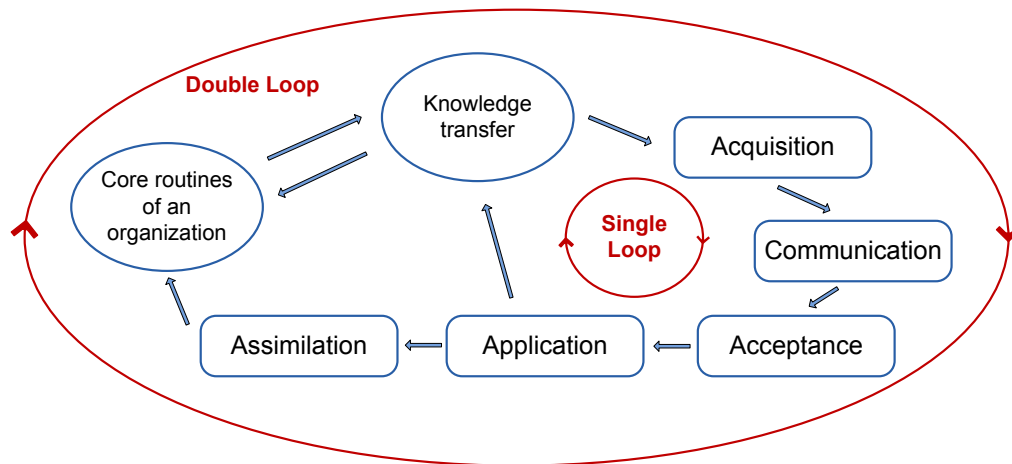


Figure 3.2 A conceptual model of knowledge transfer

To clarify the process of knowledge transfer, the model of Gilbert and Cordey-Hayes has been adapted. A number of arrows are left out because they don't contribute to the understanding of the process. The terms single and double loop are added because they clarify the difference between knowledge transfer on an individual or group level and knowledge transfer on organizational level.

Knowledge transfer on an individual or group level can take place after acceptance of knowledge but organizational learning happens only when there is assimilation of the results and effects of applying the gained knowledge. Hereafter this model will be explained by describing the different elements of the model.

Acquisition is the first step in the model of knowledge transfer. Before knowledge can be transferred it has to be acquired. The second step is *communication*, which can be written or verbal. Communication is the process of distributing the knowledge acquired. 'The model requires that the communication mechanisms are developed so that the opportunities for transferring knowledge effectively are both present and encouraged' (Gilbert and Cordey-Hayes, 1996). *Acceptance* is the third step; after knowledge is acquired and communicated, the person the knowledge is transferred to must accept it. In the fourth step *application*, the knowledge is applied so it will be retained. The fifth step, *assimilation*, 'requires the transfer of the results of history into the routines of the organization' (Gilbert and Cordey-Hayes, 1996).

The original model of Gilbert and Cordey-Hayes (1996) is developed to represent knowledge transfer for companies that are focused on technological innovation and they approach knowledge transfer from the point of view of the organization or person who transfers knowledge. This thesis is focused on the individuals that need or want knowledge from another person or from the organization and therefore the model is approached differently but the elements of this model remain the same.

Chapter five uses the elements 'acquisition', 'communication' and 'assimilation' to describe the situation at the Dutch Navy. In chapter six the elements 'acquisition', 'communication', 'acceptance' and 'application' are part of the description.

3.2.2 Type of knowledge transfer

Within the model of Gilbert and Cordey-Hayes (1996), knowledge can be transferred in different types depending on the kind of knowledge that is transferred. In section 3.1.2 the different kinds of knowledge, implicit and explicit, were explained. Hereafter, the ways in which these kinds of knowledge can be transferred are described.

Nonaka and Takeuchi (1995) make a distinction between tacit and explicit knowledge by suggesting four basic patterns for creating knowledge in any organization. These are 'socialization', 'articulation', 'combination' and 'internalization'. In figure 3.3 these four basic patterns are illustrated.

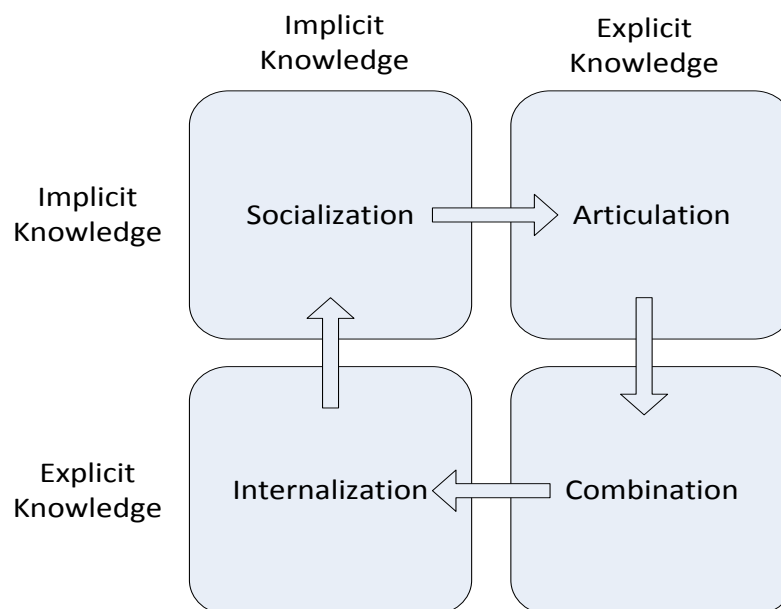


Figure 3.3 Knowledge cycle

To create knowledge on organizational level, a constant interaction must exist between implicit and explicit knowledge. The four patterns that can be distinguished for creating knowledge are explained below by using examples of Dankbaar and Oprins (2002). Not every pattern has to be passed in order to transfer knowledge and the beginning of the cycle depends on the situation, but according to Nonaka and Takeuchi (1995) the knowledge cycle often starts with socialization.

Socialization (sympathized knowledge): knowledge transferred from implicit to implicit knowledge. Socialization implies acquiring and exchanging concrete experiences and can occur by for example copying, imitating, the existents of a master-apprentice relation, or by experience trial-and-error.

Articulation (conceptual knowledge): knowledge transferred from implicit to explicit knowledge. Articulating or making a drawing of implicit knowledge that has been clear in socialization makes this knowledge explicit.

Combination (system knowledge): knowledge transferred from explicit to explicit knowledge. By combining different forms of explicit knowledge, new knowledge can be created.

Internalization (operational knowledge): knowledge transferred from explicit to implicit knowledge. Explicit knowledge is now used to broaden, extend and reframe implicit knowledge (Nonaka and Takeuchi, 1995).

In their article of the knowledge-creating company, Nonaka and Takeuchi (1995) point out that the central activity of the knowledge-creating company is to make implicit knowledge available to others. Knowledge can be made available to others in two different ways, in the next subsection these two kinds of knowledge transfer are expounded.

3.2.3 Mode of knowledge transfer

Knowledge can be communicated in a formal or an informal way. In this section the differences between formal and informal knowledge transfer are explored.

Kraut, Fish, Root & Chalfonte (1990) made a distinction between formal and informal communication. The distinction is made on seven points as shown in table 3.2. Knowledge transfer cannot take place without communication but not every form of communication results in knowledge transfer. Communication is also the second step in the process of knowledge transfer.

Formal communication	Informal communication
Scheduled in advance	Unscheduled
Arranged participants	Random participants
Participants in role	Participants out of role
Preset agenda	Unarranged agenda
One-way	Interactive
Impoverished content	Rich content
Formal language	Informal language

Table 3.2 Distinction between formal and informal communication

Formal knowledge transfer is organized, structured and goal-oriented. The transfer of formal knowledge contains indisputable, existing knowledge secured in explicit objectives (Dankbaar & Oprins, 2002). Examples in which formal knowledge is transferred are attending an education or training, briefings and information from databases. Informal knowledge can be gathered in everyday situations or in working situations. Examples of informal knowledge transfer is brainstorming about solutions for a problem or debating with colleagues (Dankbaar & Oprins, 2002).

Coffield (2000) point out that when an iceberg would represent learning, the section above the water covers formal learning and the two third sections beneath the surface represent informal learning. In other words, informal learning covers a substantial part of the process of learning.

In a case study from a rapidly expanding firm Ali (2001) concluded that employees remained faithful to their informal and social networks as the principle mode of sharing and developing knowledge. Even when there is a lot of money involved in simplifying the sharing of knowledge by raising for example an electronic database (Theunissen, Friele & Keijzers, 2003).

Pelz & Andrews (1968), Mintzberg (1973) and Allen (1977) (quoted in Levin & Cross) indicates 'that people prefer to turn to other people rather than documents for information'. Cross (2001, quoted in Levin & Cross) 'found that even people with ready access to well-populated electronic and paper-based sources of information reported seeking information from colleagues significantly more than from these sources'.

3.3 Support of knowledge transfer in organizations

Considering how knowledge can be transferred and the type of knowledge that is transferred, there are various ways an organization can provide support in knowledge transfer. Since knowledge has become more important, organizations are trying to manage this knowledge. The purpose of knowledge management is to improve the competence of employers to apply, share and develop knowledge. This knowledge can be explicit or implicit when it is to be transferred to explicit knowledge and can be shared with others (Dankbaar, Oprins, Andriessen, van Hoek & Tonneman, 2002, p 9).

Weggeman (1997) defines knowledge management as the way of organizing and managing the operational processes in the knowledge value chain that lead to the promotion of the collective ambition, the targets and the strategy of the organization. This section outlines the support of knowledge transfer at organizations by using knowledge management tools. The different ways an organization can support knowledge transfer is divided into formal and informal knowledge transfer.

3.3.1 Support in the transfer of formal knowledge

Computer-based information systems

The aim of computer-based information systems is 'to provide powerful means of gaining new insight into, and control over, business functions and to assist directly in knowledge sharing activities in all organizational areas' (Wilson, 2005). Ultimately is the purpose to create a learning environment in which the members of the organization can collect and deliver knowledge when needed and possible.

According to Hislop (2002) computer based information systems are most useful when explicit information is transferred. This 'knowing about' information could be written down into for example a database. Implicit knowledge cannot be stored in computer based information systems because implicit knowledge can only be made explicit through interaction. Databases are useful in the first stage of knowledge transfer because they provide in the search of knowledge (Kwan & Cheung, 2006).

To access the information in a computer based information system there is little human interaction needed (Trainor, Brazil and Lindberg, 2008). This might be an advantage because colleagues don't have to be involved in the information gathering process. Asking colleagues for information might be seen as a barrier and consulting for example a database is anonymous.

Publishing information folders

Through publishing information folders an organization can provide knowledge updates to their employees. Supporting knowledge transfer by using such a folder can only result in the transfer of explicit knowledge, while there is no interaction between different people. The content of these information folders can be of different sorts of information. An information folder can for example hold experiences of employees, scientific articles or opinions of employees about a specific subject.

Briefings and presentations

In consequence of arranging briefings or presentations an organization can encourage knowledge transfer. This formal way of transferring knowledge can be seen as a one-way direction of sharing knowledge, without asking questions taken into account. During a briefing or presentation only explicit knowledge is transferred. Implicit knowledge can be transferred when there is the possibility to ask question during or after the briefing or presentation.

3.3.2 Support in the transfer of informal knowledge

Communities of practice

According to Wenger, McDermott and Snyder, 'communities of practice are groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis'.

Communities of practice are resulting in an informal way of knowledge transfer. When knowledge is shared in communities of practice, experiential or implicit knowledge is shared while there is a greater degree of human interaction (Trainor et al, 2008). When implicit knowledge is articulated the knowledge has been made explicit and can be used by the people who joined the community of practice. 'The collaborative knowledge of the community of practice is greater than any individual knowledge' (Johnson, 2001).

Other results and benefits of communities of practice are according to Wenger & Snyder (2000): they help drive strategy; they start new lines of business; they solve problems quickly; they transfer best practices; they develop professional skills; and they help companies recruit and retain talent.

A small remark towards communities of practice is that it is not easy to build and sustain these communities or to integrate them into the rest of the organization. Besides, knowledge that is transferred in communities of practice is often not documented. This means that the knowledge is stock in the heads of the people and not embedded in the organization for the long term.

3.4 Conclusion

Knowledge is about knowing what certain information or experiences mean and using this information or experiences to act upon. The process of knowledge transfer can be described using a single and double loop. Within the single knowledge transfer loop, the first step is acquisition, the second step is communication and the third step is acceptance and application. Double loop knowledge transfer occurs when after acceptance and application the knowledge is assimilated. The result of assimilation is that knowledge is secured and finally embedded in the organization.

This chapter gave an answer on the research questions 'How do employees transfer knowledge in an organizational setting?' and 'In what ways can the transfer of knowledge be supported by an organization?'

Knowledge in an organizational setting can be transferred in an informal or formal way. Formal knowledge transfer occurs when the transfer is organized, structured and goal-oriented. Informal knowledge is transferred without in some way organizing or facilitating knowledge transfer and can be gathered in everyday situations or in working situations. Depending on the way this knowledge is transferred it can imply implicit or explicit knowledge. Implicit knowledge is more difficult to transfer than explicit knowledge while implicit knowledge is embedded in people's minds and is hard to verbalize. Explicit knowledge is ready to use and relatively easy to verbalize, store and distribute. Implicit knowledge can only be transferred informal, when there is interaction between the person who shares knowledge and the person who gathers knowledge. Explicit knowledge can be transferred both formal and informal.

An organization can facilitate informal knowledge transfer by create for example communities of practice. Formal ways of transferring knowledge can be facilitated by computer based information systems, arranging presentations and briefings or by publishing information folders.

4 Causes of problems in knowledge transfer

The research question *'What can be causes of problems in transferring knowledge in organizational setting'* will be answered in this chapter. Following Edwards and Kidd (2003), who see knowledge management as a process, there are three factors that might be enablers or barriers to knowledge management. The three factors are trust; organizational culture; and the relationship between top down strategy and bottom up organizational learning. These factors also have their effects on knowledge transfer. Levin and Cross (2004) defined a fourth aspect that relates to the knowledge transfer problem and fits into this list, namely social networks. In the subsections below these four factors are expanded further, starting with social networks.

4.1 Social networks

Following Podolny and Page (1998) a network consist of actors that pursue repeated and enduring exchange relationships with one another. The network applicable in this thesis exists within an organization and contains random undefined actors.

Inkpen and Tsang (2005) make a distinction between three types of networks, which are intracorporate network, strategic alliance and industrial district. An intracorporate network consists of a group of organizations or departments, falling under a unified corporate identity. Strategic alliances are groups with voluntary arrangements in sharing or exchanging products, technologies and services (Gulati, 1998). The industrial district type of network is 'a network comprising independent firms operating in the same or related market segment and a shared geographic locality, benefiting from external economies of scale and scope from agglomeration' (Brown and Hendry, 1998: 133).

In this thesis the focus is on knowledge transfer between members within an organization and therefore the intracorporate network type is further elaborated by describing the conditions that might be enablers to knowledge transfer. By using the dimensions of social capital, which are structural, cognitive and relational, these conditions are described. Porter (1998) describes the concept of social capital as the ability of actors to secure benefits by virtue of membership in social networks or other social structures. Below the different conditions that facilitate knowledge transfer are described. If these conditions are not fulfilled they might be seen as barriers to knowledge transfer.

Network ties

Network ties in relation to knowledge transfer are the ties between the knowledge seeker and the knowledge source. These ties deal with the specific ways in which the actors are related and can provide channels for knowledge transfer while they facilitate inter-member social interactions (Inkpen and Tsang, 2005). There is much literature on the strength of network ties and in what way they can influence knowledge transfer. Levin and Cross (2004) concluded that strong ties do have a positive and statistically significant effect on the receipt of useful knowledge.

Network configuration

The pattern of linkages among network members is determined by the configuration of a network (Inkpen and Tsang, 2005). Elements of configuration are hierarchy, density and connectivity of

networks and these affect the flexibility and ease of knowledge transfer through their impact on the extent of contact and accessibility among network members (Krackhardt, 1992). Authority must be decentralized to network members so that they can determine how to make the best use of the knowledge they possess. By decentralizing authority it can facilitate timely knowledge sharing among members of a network (Inkpen and Tsang, 2005). In a study of a large and multiunit company, Tsai (2002) found out that centralization is negatively associated with knowledge transfer within an organization.

Network stability

Inkpen and Tsang (2005: 153) define network stability as 'change of membership in a network'. When members leave a network, ties disappear and opportunities for the creation of social capital may be limited. These members take with them knowledge that may be necessary for the success of an organization. 'Maintaining a stable pool of personnel within a network can help individuals develop long-lasting interpersonal relationships' (Inkpen and Tsang, 2005: 156).

Shared goals

'Shared goals represent the degree to which network members share a common understanding and approach to the achievement of network tasks and outcomes' (Inkpen and Tsang, 2005: 153). When network members have the same vision and shared goals it can promote mutual understandings and exchanges of ideas and resources (Inkpen and Tsang, 2005).

Shared culture

'Shared culture refers to the degree in which norms of behavior govern relationships' (Inkpen and Tsang, 2005: 153). When knowledge is transferred from one member to another member of a network it is necessary that these members understand each other's national or local culture and are not hindered by cultural conflicts (Inkpen and Tsang, 2005). While organizational culture can be a barrier or enabler to knowledge transfer this is further elaborated in section 4.3.

Trust

An absence or shortcoming in trust in employees or in the organization is further elaborated in section 4.2 as a separate enabler or barrier in knowledge transfer.

The figure represented below gives an overview of the subjects that were described in this section. Each enabler of knowledge transfer is related to a type of condition that has a positive influence on knowledge transfer within an organization.

Social Capital Dimension	Condition	Incorporate Network
Structural	Network ties	Personnel transfer between networks
Structural	Network configuration	Decentralization of authority
Structural	Network stability	Low personnel turnover organization wide
Cognitive	Shared goals	Shared vision and collective goals
Cognitive	Shared culture	Accommodation for local or national cultures

Figure 4.1 Conditions that can facilitate knowledge transfer

4.2 Trust

Schoorman, Mayer and Davis (2007) define trust as the 'willingness to take risk' and 'the level of trust is an indication of the amount of risk that one is willing to take'. A considerable amount of literature has been published on the importance of trust in organizations (e.g. Hosmer, 1995). These studies highlight the evidence that trust has a number of important benefits for organizations and their members.

Following Edwards and Kidd (2003) knowledge sharing raises issues of trust, even without any kind of formal system. The amount of information flowing from one person to another person or from one section to another section can influence the level of trust. Little information flowing between people can have a negative influence on the level of trust (Edward and Kidd, 2003).

In the literature about trust in combination with communication there has been found a positive significant relationship between trust and communication by several authors (Zand, 1972; Boss, 1980; Smith and Barclay, 1985). In these studies there has been found both a significant outcome in the amount of information sharing as well as in the openness in communication in relation with trust. Also several authors found no significant relationship between trust and communication (De Dreu, Giebels and van de Vliert, 1998; Dirks, 1999), but to the knowledge of this author; no studies reported a negative effect between trust and communication.

More recent studies on trust and knowledge transfer have reported considerable evidence that trusting relationships lead to greater knowledge transfer (Levin and Cross, 2002). Andrews and Delahay (2000) stated that when the levels of trust are higher, people are more willing to give useful information. Levin & Cross (2004) also mentioned that these people are also more willing to listen to this person and absorb the given information.

4.3 Organizational culture

'An organizational context that facilitates and promotes knowledge transfer will increase the likelihood of successful knowledge transfer' (Kwan & Cheung, 2006). The organizational culture should encourage knowledge sharing in order to enable knowledge transfer, so employees are willing to share knowledge. Edward and Kidds (2003) point out that when there are major cultural differences between two sections of a company, it is possible that information no longer flows from one to another but merely data. This means that there is no knowledge transfer between the two sections of a company.

O'Hair, Friedrich, Wiemann and Wiemann (1997: 9) define culture as 'the shared beliefs, values and practices of a group of people'. Abou-Zeid (2005) mentioned in his study the link between the value-belief theory in which the shared values of culture are enacted in behaviors, policies and practices. In this context, values are defined as 'the standards or criteria for selecting from alternatives and standards that guide ongoing activities' (Abou-Zeid, 2005, 148).

Abou-Zeid (2005) summarized different propositions for which he found supporting empirical evidence. Derivatives of these propositions, which lead to successful knowledge transfer, are described point by point below.

Initialization

With regard to the basic knowledge of the knowledge transfer partners, the value systems of both the knowledge seeker and the person who shares the knowledge should be similar in order to transfer knowledge (Yoo and Torry, 2002). This means that the persons who are involved in transferring the knowledge should have the same state of mind about the underlying perceptions of the knowledge that is to be transferred because otherwise the recipient can interpret the knowledge differently.

The willingness to share specialized knowledge with others depends on the transparency of the specialized knowledge of an organization (Lane and Lubatkin, 1998; Gupta and Govindarajan, 2000). When an organization is open about the knowledge that exists in an organization and where the information can be found, personnel is more likely to transfer knowledge.

Inter-relation

'The effectiveness of knowledge transfer conduits is positively related to the degree of similarity of value systems of the knowledge transfer partners with regard to problem solving and conflict resolution, the complementarity of special behavior values of knowledge transfer partners with regard to knowledge sharing, and to the compatibility between the recipient's knowledge structure and knowledge transfer conduit' (Abou-Zeid, 2005, p150). The way in which the knowledge sharer and recipient communicate is significant in the transfer of knowledge. For example when the recipient wants the information face to face and the sharer want to e-mail the information it might lead to misunderstanding of the information or different interpretation of the information. Furthermore different types of knowledge should be shared in different ways in order to absorb and transfer the knowledge.

Implementation

The capacity of the recipient to apply newly acquired knowledge is positively related to its capacity to localize and to integrate the knowledge (Leonard-Barton, 1992; von Krogh, Nonaka & Takeuchi, 1995). The participants in knowledge transfer have to be encouraged to search for knowledge in an organization. Different organizational levels and different occupational cultures have to actively participate in order to have a success in knowledge localization (Abou-Zeid, 2005). Integrating newly acquired and existing knowledge can be through systems, coordination and socialization (van den Bosch, Volberda and de Boer, 1999). Systems can integrate explicit knowledge whereas coordination and socialization can integrate implicit knowledge as well as explicit knowledge. Coordination for example might enable more knowledge transfer through job rotation or training. Socialization is in context with the norms and values within an organization.

Internalization

The capability of institutionalizing newly acquired knowledge by an organization is positively related to the degree of alignment between its corporate culture and its occupational cultures (Sackmann, 1992; Argote and Ingram, 2000). Between corporate and occupational cultures there is always a potential conflict between their values and interests and therefore the main challenge in knowledge internalization is to let individuals identify with the organization instead of with particular groups (Child and Rodrigues, 2003).

4.4 Knowledge management and organizational learning

Where the top meets the bottom – Edwards and Kidd (2003).

Vera and Crossan (2003) define organizational learning as the process of change in individual and shared thoughts and action that is affected by, and embedded in, the institutions of the organization. Knowledge management on the other hand enables the creation, distribution and exploitation of knowledge to create and retain greater value from core business competencies (Tiwana, 2003).

Knowledge management has a top-down strategic direction, whereas the direction of organizational learning is bottom-up. Matching top-down knowledge management with bottom-up organizational learning is essential in order to achieve something concrete. 'Knowledge management must enable organizational learning, in terms of permitting and facilitating it, but it is only through organizational learning that knowledge management can be implemented, to make it a day-to-day reality in organizations' (Edwards and Kidd, 2003). Thus, an organization that is applying knowledge management without taken into account organizational learning cannot support knowledge transfer, whereas an organization where knowledge management and organizational learning are linked to each other support knowledge transfer.

4.5 Conclusion

The research question '*What can be causes of problems in transferring knowledge in organizational setting*' is answered in this chapter.

Problems in knowledge transfer might be caused through shortcomings in social networks; lack of trust in the shared knowledge or trust in the person that shares the knowledge; an organizational culture that doesn't facilitate knowledge transfer; or an unbalance between knowledge management and organizational learning. Some of these causes might overlap each other partly, but in favor of the convenience of comparison they are mentioned separately. Within social networks a distinction can be made between network ties, network configuration, network stability, shared goals, shared culture and trust as underlying barriers to knowledge transfer. According to trust literature, little communication between people has a negative influence on trust between those people. The amount of information sharing and the openness in information sharing is also influencing trust between people and the related knowledge that is shared. An organizational culture, which is not aimed at knowledge sharing, might have negative effects on knowledge transfer. Underlying variables that influence knowledge transfer in relation to organizational culture are the value systems of the knowledge transfer partners, the transparency of the knowledge within an organization and common thinking about the strategy of an organization. Furthermore localization and integration of knowledge by the knowledge seeker might be influenced by culture and the way of communicating knowledge by executives or knowledge transfer partners. At last the alignment of the corporate and occupational culture might influence knowledge transfer as a variable of organizational culture. The last concept is the link between knowledge management and organizational learning. Knowledge management should take into account organizational learning, because without doing so it cannot support knowledge transfer.

Below (figure 4.2) a summary of the four concepts, including the underlying variables is presented in a model.

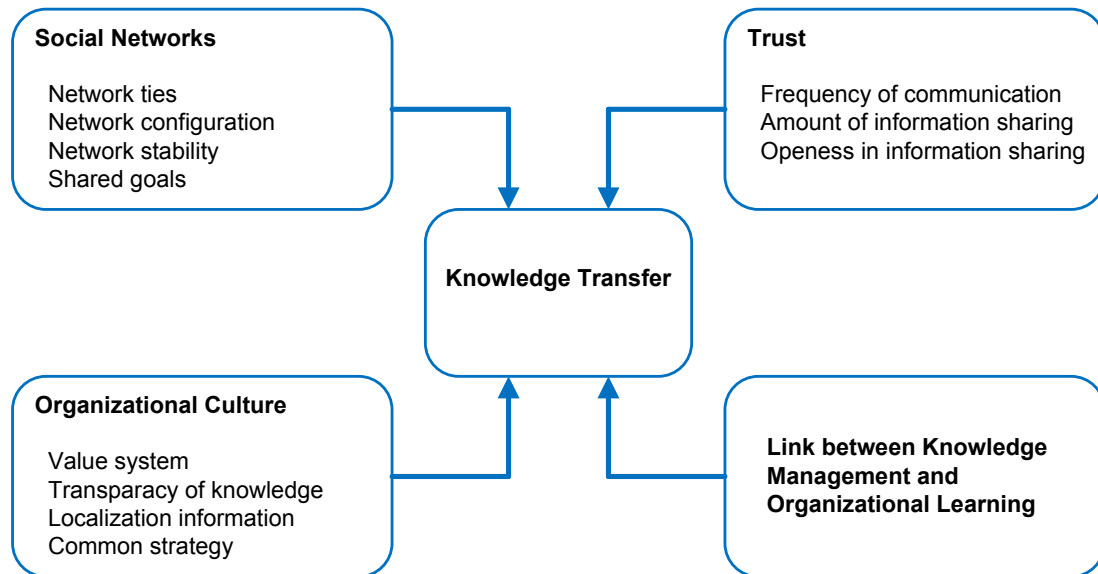


Figure 4.2 Concepts that influence knowledge transfer.

In chapter six the possible causes of problems in knowledge transfer described in this chapter are compared to the situation at the Dutch Navy.

5 Transfer of Lessons Learned and problems in transferring Lessons Learned at the Dutch Navy

Lessons Learned are a much-discussed subject at the Dutch Navy and it has become clear that by learning from experiences of others and by facilitating this process advantages can be made. This chapter describes the status quo of the transfer of Lessons Learned, and the way in which the transfer of Lessons Learned is facilitated at the Dutch Navy. The research questions *'How do crewmembers, working at the fleet of the Dutch Navy, transfer Lessons Learned?'* and *'In what way does the Dutch Navy provide assistance in the transfer of Lessons Learned?'* will be answered in this chapter. The results of the questionnaire and interviews are used to give an answer on these research questions.

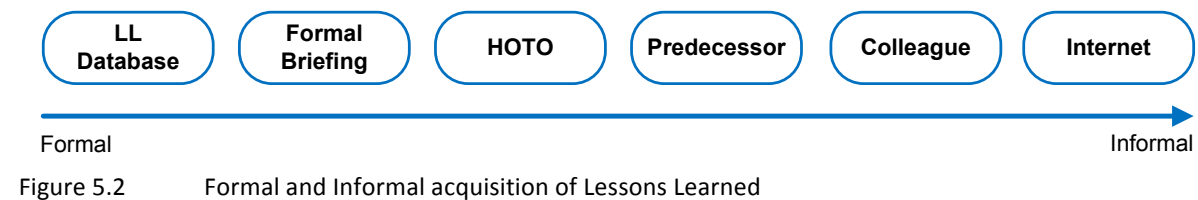
The Dutch Navy makes a distinction between Lessons Learned and Lessons Identified. The Dutch Navy describes Lessons Identified as observations (Aanwijzing commando zeestrijdkrachten 119). The definition of Lessons Learned that fits best in this study and therefore describes the way the Dutch Navy is using Lessons Learned has been formulated by Secchi (1999), used by Weber, Aha and Becerra-Fernandez (2001). *'A Lesson Learned is a knowledge or understanding gained by experience. The experience may be positive, as in a successful test or mission, or negative, as in a mishap or failure'*. On organizational level, Lessons Identified might transfer into Lessons Learned when subject matter experts dealt with the Lessons Identified (see figure 5.3). On individual level, when a person learned something by experience and transfers this lesson towards another person it is called a Lessons Learned for both persons.

The purpose of Lessons Learned for the Defense organization is to reach improvements on the field of doctrine, education, training, equipment, personnel, leadership, facilities and interoperability. After these improvements were made, they must be secured in the organization and there must be the widest possible sharing of these Lessons Learned within the Defense organization. With this a contribution will be delivered to the increasing of effectiveness and suitability of the army (CDS Aanwijzing A-1202, 2010).

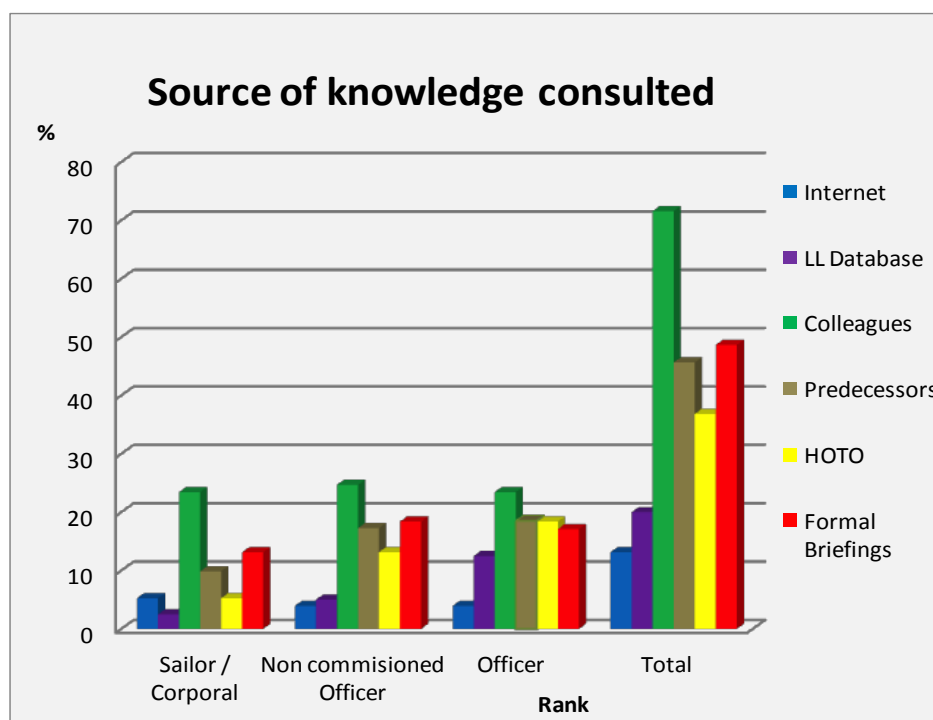
The transfer of Lessons Learned at the Dutch Navy will be elaborated by using the model of Gilbert and Gordey-Hayes (1996), explained in section 2.3. The first two concepts, acquisition and communication, are equated to the situation of the Dutch Navy. The first section outlines the way in which the crewmembers of the two vessels of the Dutch Navy gather Lessons Learned and which channel of communication they use to collect these Lessons Learned. The last concept, assimilation, is also equated to the situation of the Dutch Navy and is elaborated in the second section. The third and fourth concepts, acceptance and application, are not further expanded in this chapter because they do not contribute to answering the question about the way in which personnel of the Dutch Navy transfer knowledge and about the way the Dutch Navy facilitates in this process.

5.1 Acquisition & Communication

Acquisition of Lessons Learned is about who or what to contact to gather Lessons Learned. At the Dutch Navy Lessons Learned can be gathered by consulting the Internet, the Lessons Learned Database, attending Formal Briefing, Hand Over Take Over (HOTO) moments, and by contacting Colleagues of their own vessel and/or Predecessors. During contact with these different sources, Lessons Learned can be communicated formal or informal. In section 3.2.3 a distinction between formal and informal communication is elaborated. In the figure below (5.2) the different ways in which crewmembers can collect Lessons Learned are ordered in the range of mainly formal to mainly informal.



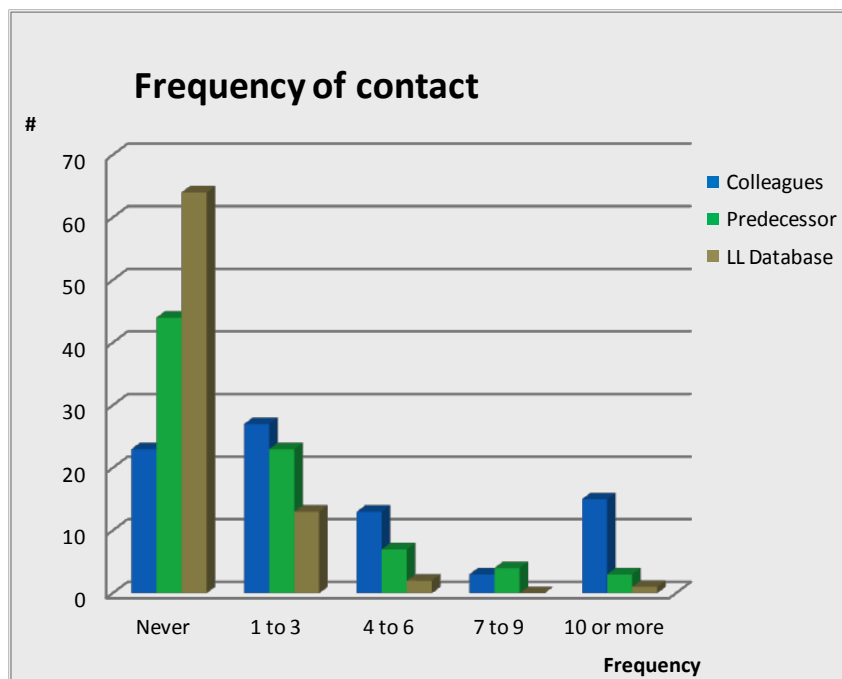
The order of sequence from formal to informal acquisition is determined by the characteristics as explained in section 3.2.3. When the Lessons Learned database is used the acquisition is formal. The same applies during formal briefings and HOTO moments, but to a lesser extent. During Formal Briefings questions can be asked whereby the acquisition of Lessons Learned becomes less formal. HOTO moments are facilitated by the Dutch Navy but are not structured and during these moments there is the possibility to interact and discuss a rich content with their predecessor. Predecessors can also, besides during HOTO moments, be contacted to gather Lessons Learned. This contact is often without a preset agenda, interactive, includes also a rich content and informal language might be used. Contact with colleagues of their own vessel is similar, but might also include random participants and is often not scheduled. Internet is the most informal way of acquiring information related to Lessons Learned.



Graph 5.1 Percentage of crewmembers consulted source of Lessons Learned

Graph 5.1, on the previous page, shows the percentages of crewmembers, divided by rank, which consulted or contacted a specific source of Lessons Learned. The graph shows that in total 72 percent of the crewmembers contacted colleagues of their own vessel to transfer Lessons Learned. There is slightly a difference between the ranks in contacting colleagues. Differences in rank can be seen by attending HOTO moments, contacting predecessors and by consulting the Lessons Learned database. The higher the rank, the more these resources are consulted. In total only 13 percent of the crewmembers (#=16) consulted the Lessons Learned database. The Internet is also hardly used as a source to gather Lessons Learned; only 10 percent of the crewmembers used the Internet. Referring to informal and formal acquisition the graph shows that most crewmembers prefer the informal way of acquisition by contacted colleagues.

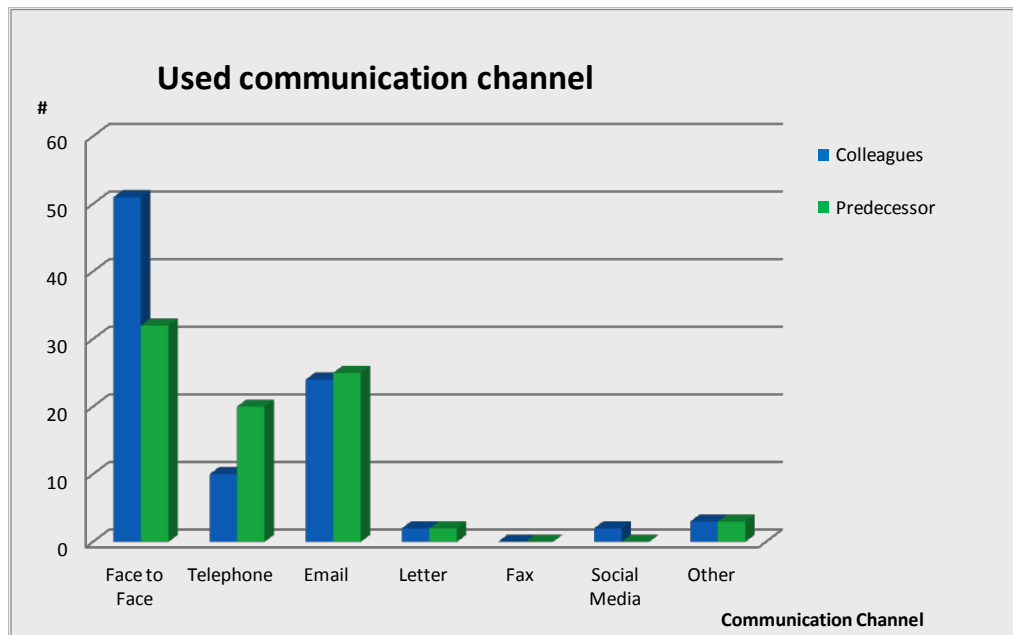
Graph 5.1 shows the number of crewmembers that consulted different sources of knowledge while the graph below (5.2) shows the frequency that these crewmembers consulted predecessors, colleagues and the Lessons Learned database.



Graph 5.2 Frequency of contact with predecessors, colleagues and the Lessons Learned database

As expected, an increase of frequency of consulting the different sources results in a decrease of the number of crewmembers who consult these resources with the exception of consulting colleagues to gather Lessons Learned.

Contact with predecessors or with colleagues can occur in different ways and with different communication channels. Lessons Learned can be communicated written or verbal and can be transferred using a telephone, e-mail, face-to-face, by letter or by using social media.



Graph 5.3 Communication channel used to contact predecessors and colleagues

Graph 5.3 shows the number of times crewmembers used different communication channels. Transferring Lessons Learned face-to-face or by using a telephone are both verbal ways of communication. Written ways of communication are sending an e-mail, letter, fax or using social media. Lessons Learned are mostly communicated face-to-face, 51 out of 81 crewmembers gathered Lessons Learned face-to-face from colleagues and 32 gathered Lessons Learned face-to-face from predecessors. E-mail is the communication channel that is used the second most in gathering Lessons Learned by crewmembers. There is not much difference between contact by email between the crewmembers and predecessors (25) and crewmembers and their direct colleagues (24).

A telephone is used twice as often to contact with predecessors than to contact with direct colleagues. 20 crewmembers used a telephone to contact with predecessors while 10 crewmembers contacted their colleagues by phone. Direct colleagues are located at the same vessel and face-to-face contact is therefore possible. The other three communication channels were hardly used. Two crewmembers used a letter to contact with both predecessors and colleagues and two crewmembers used social media to contact with their direct colleagues.

5.2 Assimilation

In chapter two, assimilation is described as the knowledge that is embedded into the routines of the organization. The Dutch Navy facilitates embedding by saving the gathered Lessons Learned into a Lessons Learned database. Below (figure 5.3), the process of assimilation at the Dutch Navy is visualized and described.

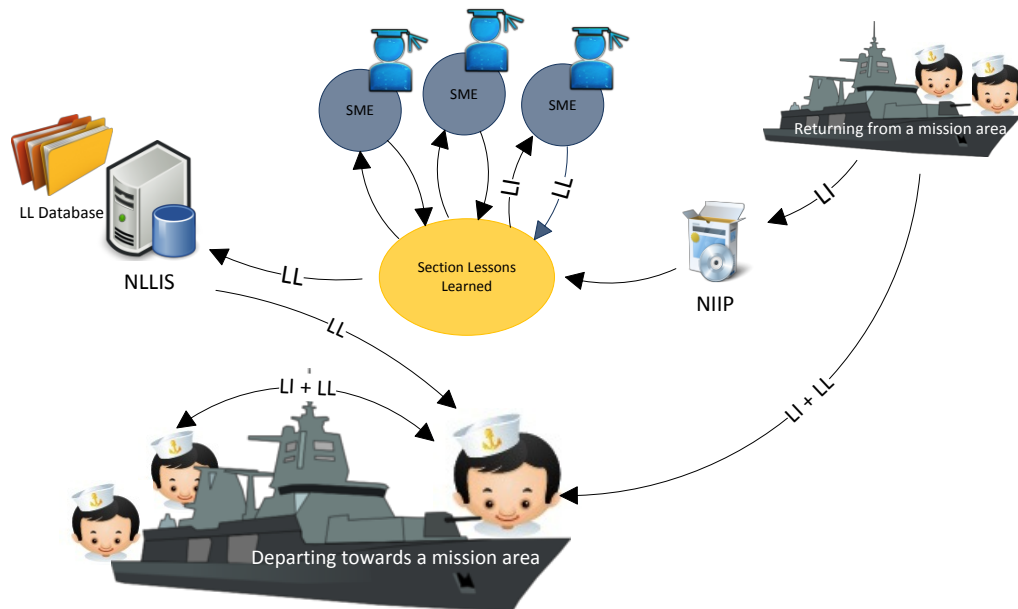


Figure 5.3 Assimilation process of Lessons Learned at the Dutch Navy (ideal situation)

Figure 5.3 gives an overview of the process of assimilation at the Dutch Navy by using the Lessons Learned Database. The process starts when a vessel returns from a mission or training. During this return the Commander of a vessel asks his crew to deliver their Lessons Identified (observations) to the crewmember appointed for this task. This crewmember collects the Lessons Identified and sends these to the Commander for a last check. After receiving feedback from the Commander he uses the Navel Instructional Input Program (NIIP) to fill out the Lessons Identified. The 'Section Lessons Learned' evaluates these Lessons Identified and transfers each of these lessons towards the subject matter experts (SME). A SME is an expert on that specific Lessons Identified subject. The SME further investigates the Lessons Identified and gives feedback to the 'Section Lessons Learned'. When a Lesson Identified is turned into a Lesson Learned this lesson is stored into the Navy Lessons Learned Information System (NLLIS). All authorized Marine personnel can gather these Lessons Learned from this system. Feedback from the SME with regard to the new Lessons Learned plus the remaining Lessons Identified, are transferred to the Commander of the vessel who provided the Lessons Identified. The commander transfers the Lessons Learned towards his crewmembers.

5.3 Conclusion

This chapter answered the questions *'How do crewmembers, working at the fleet of the Dutch Navy, transfer Lessons Learned?'* and *'In what way does the Dutch Navy provide assistance in the transfer of Lessons Learned?'*

Crewmembers of the Dutch Navy mostly transfer knowledge informally by contacting colleagues of their own vessel to gather Lessons Learned. The frequency of consulting direct colleagues is higher than consulting predecessors or the Lessons Learned database. There are no formal meetings facilitated by the Dutch Navy to transfer Lessons Learned between crewmembers of the same vessel. Remarkable is that only sixteen crewmembers used the Lessons Learned database to gather Lessons Learned.

The communication channel used by these crewmembers was mostly face-to-face, e-mail and by telephone. Thirty people contacted their predecessor face-to-face, which means they meet each other at the Hand Over Take Over (HOTO) moment or had contact with predecessors from more than one mission before their own. Only at the HOTO moment they were able to see their predecessor.

The 'Section Lessons Learned' at the Dutch Navy facilitates the process of storing and transferring Lessons Identified and Lessons Learned. Vessels that return from an anti-piracy mission gather Lessons Identified. These Lessons Identified are then transferred to the 'Section Lessons Learned' who subsequently transfers these lessons to subject matter experts. Subject matter experts take action on these Lessons Identified and can change these Lessons Identified into Lessons Learned. The results of the expertise of the subject matter experts are transferred to the Commander of the ship that delivered the Lessons Identified. These lessons are also transferred into the Lessons Learned database. Gathering Lessons Learned from the Lessons Learned database is a formal way of gathering information. Only explicit knowledge is stored in the database.

Other ways in which the Dutch Navy facilitates the transfer of Lessons Learned are organizing HOTO moments and formal briefings. In these HOTO moments both explicit and implicit knowledge can be transferred. During formal briefings mostly explicit knowledge is transferred.

6 Causes of Problems of transferring Lessons Learned at the Dutch Navy

In chapter three, possible causes of problems in knowledge transfer are described. This chapter relates these possible causes to the situation at the Dutch Navy. By using the interviews and the filled out questionnaires, the question *'What are causes of problems in the transfer of Lessons Learned at the Dutch Navy?'* will be answered. The causes of problems in the transfer of Lessons Learned can be related to social networks, trust, organizational culture and the gap between knowledge management and organizational learning. Each of these causes will be described in a separate section.

6.1 Social Networks

Within the Dutch Navy social networks are important. *'The Dutch Navy is a small world where people know each other. When contacting someone, mostly you know the person or you know at least how he/she looks like'* (quote from interview).



Graph 6.1 I know whom to contact to gather Lessons Learned.

Graph 6.1 shows whether the crewmembers with different ranks know whom they need to contact to gather Lessons Learned. The crewmembers that agreed on this statement are increasing when the rank of the crewmember becomes higher. 17 percent of the Sailors and Corporals know whom to contact to gather Lessons Learned against 24 percent of the Non Commissioned Officers and 39 percent of the Officers. In section 5.1 has been shown that crewmembers mostly transfer Lessons Learned with colleagues. As shown in graph 6.1, when there is a need for a Lessons Learned, it is remarkable that these crewmembers do not know whom to contact to gather these Lessons Learned. A reason for this problem might be that although these crewmembers know many other

crewmembers they probably do not exactly know the specific activities these crewmembers execute. Furthermore while many crewmembers indicated that they did not know of the existence of a Lessons Learned database they were triggered by the questionnaire that such a Lessons Learned database exists (see section 6.4). It is also remarkable that many crewmembers ranked this statement with neutral. The relation between rank and knowing whom to contact to gather Lessons Learned is not significant ($p=0,177$).

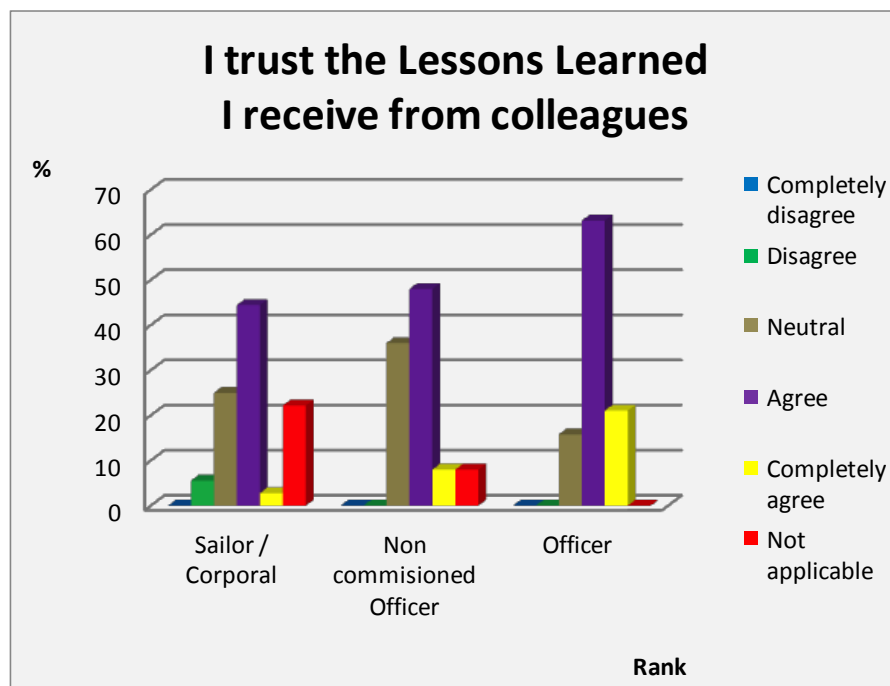
Crewmembers working at the Dutch Navy have the same goals, especially when they are joining the same mission. This goal is often really concrete and specific. A mutual goal is an enabler for knowledge transfer within networks.

Within the Dutch Navy job rotation is a normal procedure. Every three years employees need to change towards another function. An advantage of job rotation is that the numbers of nodes that are connected are growing because when jobs are rotated new network connections are made. On the other hand, job rotation does not support the stability of networks and therefore can be seen as a barrier for knowledge transfer because the ties between nodes within a network get weaker.

Nevertheless, the Dutch Navy network ties are not weak because crewmembers attend the same classes during their education and/or are working closely together in teams while being on a military mission or training. Knowing the other with whom you want to transfer Lessons Learned contributes to the amount of information that is shared while strong ties results in trust between crewmembers.

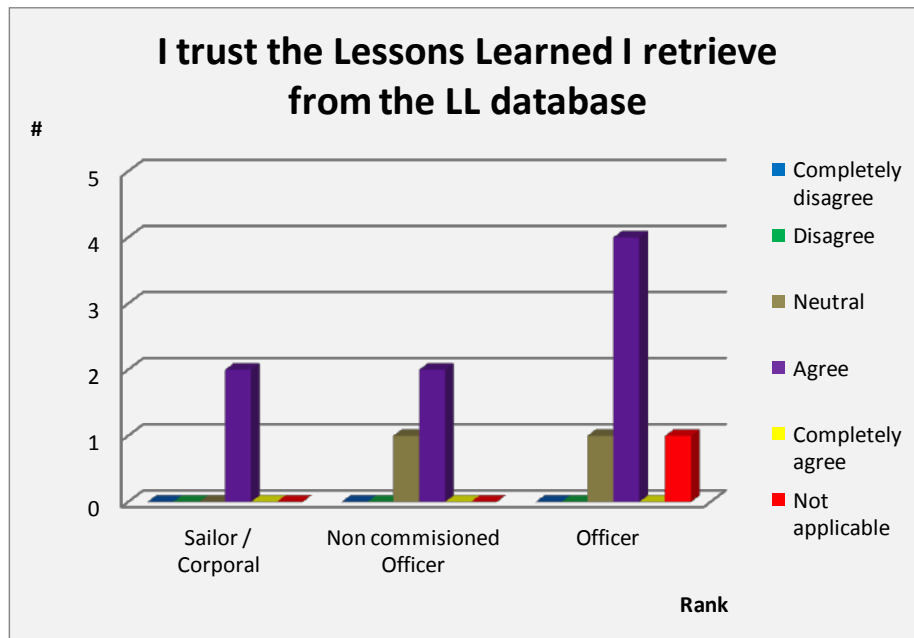
6.2 Trust

Someone will only accept a Lesson Learned when he trusts the received Lessons Learned. This includes both the information that is transferred and the person who is transferring this information.



Graph 6.2 Trust in Lessons Learned from colleagues

In graph 6.2, on the previous page, the trust in Lessons Learned from colleagues is represented. The crewmembers in general trust the Lessons Learned from colleagues. Only six percent of the sailors or corporals are disagreeing the statement. Trust in each other is also related to social networks (section 6.1). People trust each other more when their network ties are stronger. In general, the better people know each other the more they trust each other.

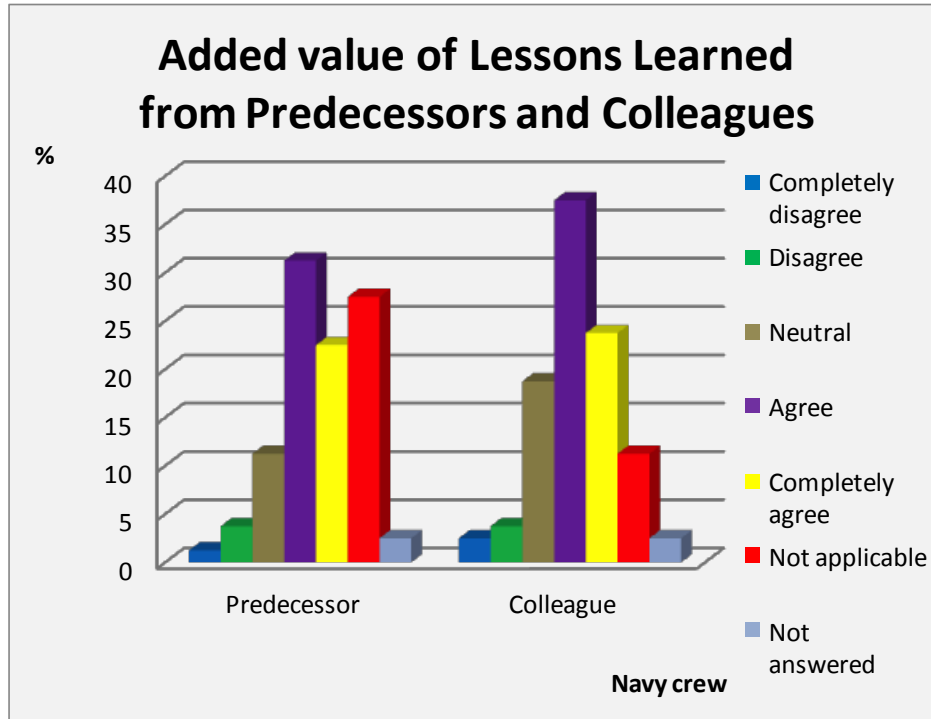


Graph 6.3 Trust in Lessons Learned from the LL database

Graph 6.3 represents the statement 'whether the crewmembers trust the Lessons Learned from the LL database'. Only eleven crewmembers filled out the statement because only those crewmembers that used the database gave their opinion about this statement. None of these eleven crewmembers disagreed the statement. In total eight people trust the Lessons Learned from the database.

6.3 Organizational Culture

The Dutch Navy is an organization where knowledge sharing is important. *'It is important to share experiences, otherwise I you walk against a lot of doors because in the African harbours things go different then in the European harbours'* (quote from interview).



Graph 6.4 Added value of Lessons Learned from predecessors and colleagues

In graph 6.4 the added value of receiving Lessons Learned by crewmembers from predecessors and direct colleagues are represented. Because not every crewmember contacted their predecessor, not applicable is filled out more than twice as often as it is filled out for colleagues. 54 percent of the crewmembers agreed or completely agreed the statement related to predecessors and 62 percent agreed or completely agreed the statement related to direct colleagues. In conclusions, the added value in relation to both predecessors and colleagues is rated relatively high, especially when 'not applicable' is not taken into account.

In chapter five is shown that informal contact is the most common way of transferring Lessons Learned at the Dutch Navy. This contact is mostly face-to-face because of strong connections in the social networks. *'There are no better Lessons Learned then from informal contacts, we arrange everything by this way of contact'* (quote from interview).

The organization of the Dutch Navy has a hierarchical military structure and the employees are adapted to this structure. This hierarchical structure is most relevant during a mission or training while there must be made quick decisions with often high consequences. Military officers can be seen as managers and non commissioned officers are responsible for the skills and drills of the sailors and corporals involved. Non commissioned officers have expertise that is based on practical experiences.

Both in the questionnaire and the interviews, non commissioned officers had remarks about not acting upon the Lessons Identified provided. *'It often happens that crewmembers want to reinvent the wheel, while they think they know things better'* (quote from interview). *'On higher level, the Dutch Navy should learn more from each other to prevent that the wheel is reinvented'* (quote from questionnaire).

During one of the interviews the following example from a non commissioned officer about not acting upon the Lessons Identified is given.

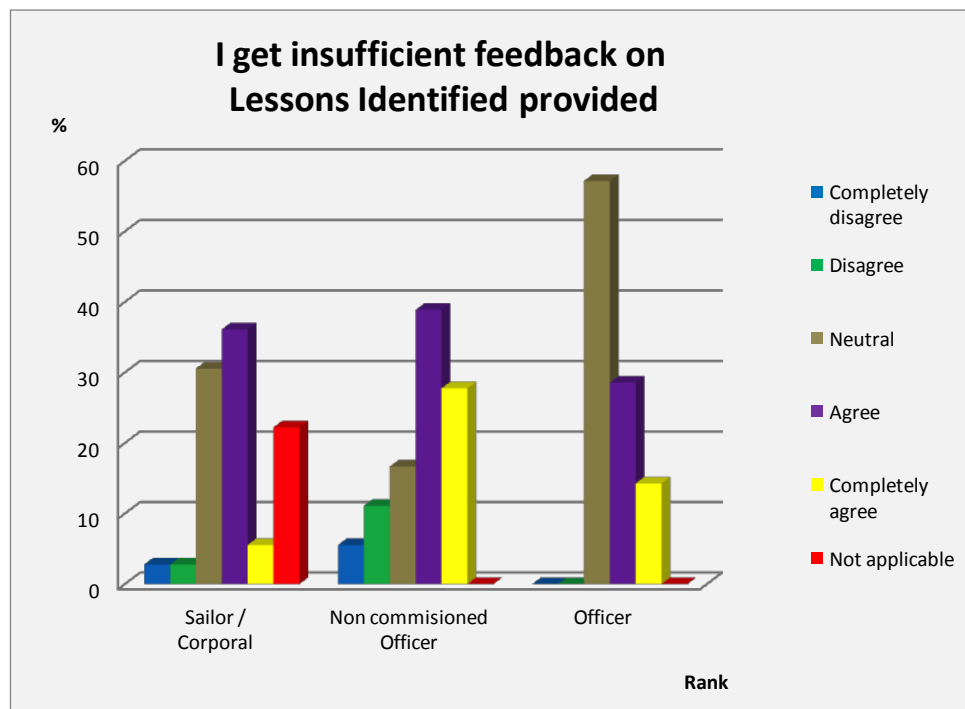
'During the anti-piracy mission we walked our shifts in three divisions. Everyone experienced the three division shifts as very good. The workload is not too high, because shifts are maximum four hours in sequence. We communicated these good experiences with crewmembers of Hr. Ms. Tromp and these crewmembers were enthusiast about this idea.

At this moment the Hr. Ms. Tromp is using shifts of two divisions, which means seven hours in sequence. Per vessel a separate decision is made about the way they want to arrange their activities, but I do not understand why they stick to their own ideas and do not listen to other vessels that have experienced the three division shifts. We hear complains of crewmembers of Hr. Ms. Tromp who are walking shifts in two divisions, these shifts are too long and boring.

This example is matching the culture of the Dutch Navy, while we all know it better ourselves' (quote from interview).

This example makes clear that Lessons Identified provided are not always used, although it could result in an improvement of a mission. Because the Commander of a vessel might determine in cooperation with his staff the organization of a mission. These persons can either accept or reject Lessons Learned from predecessors or from other colleagues. The culture of the Dutch Navy, which includes the hierarchical structure, allows a Commander of a vessel to execute his own plans. In the literature is also found that centralization is negatively associated with knowledge transfer within an organization. The masculine culture of the Dutch Navy might be a reason of not always acting upon Lessons Learned from other vessels.

During the interviews some interviewees said that they would like feedback on their Lessons Identified. Due to the lack of feedback they got the feeling that nothing is done with their provided Lessons Identified.



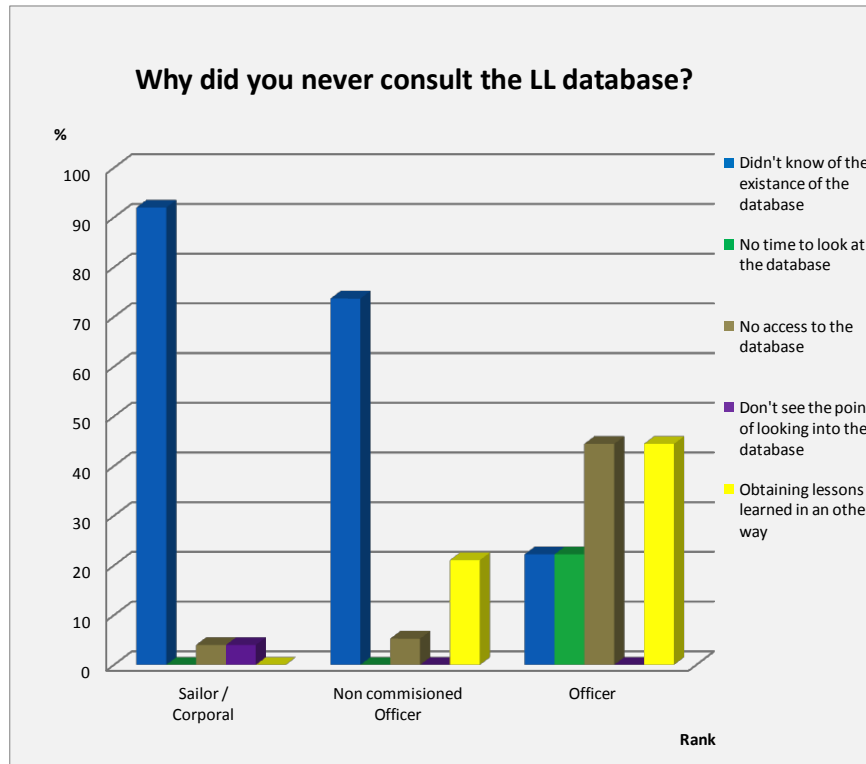
Graph 6.5 Insufficient feedback on the Lessons Identified provided

The crewmembers who filled out the questionnaire support the statement of the interviewees who would like to have feedback on their Lessons Identified. Graph 6.5 shows that most crewmembers, 42 percent of the sailors or corporals, 67 percent of the non commissioned officers and 43 percent of the officers, do agree or completely agree with the statement. Remarkable is the high percentage of officers that gave a neutral answer, namely 57 percent.

Insufficient feedback on Lessons Identified provided could result in a decreasing motivation to provide new Lessons Identified. Overall, crewmembers would be more committed in the process of gathering and sharing Lessons Identified and Lessons Learned when feedback is provided.

6.4 Knowledge Management – Organizational Learning

As described in section 5.2 the Dutch Navy uses a Lessons Learned database to store and distribute Lessons Learned. Section 5.1 shows that only 16 crewmembers consulted this database. These crewmembers did not fill out the question about not consulting the Lessons Learned database. This section elaborates the reasons why the other crewmembers did not access this database.



Graph 6.6 Arguments for not consulting the Lessons Learned database⁶

The reasons for not consulting the Lessons Learned database are shown in graph 6.6. 92 percent of the sailors or corporals who answered the question (25) did not know about the existence of the Lessons Learned database. For the non commissioned officers (19) and the officers (9) the percentages are respectively 74 and 22 percent. Some officers indicated that they do not have access to the database, namely 44 percent. Also 44 percent of the officers obtain Lessons Learned in a different way.

Both interviews and questionnaires revealed that the crewmembers are willing to access the Lessons Learned database if they knew the existence. In addition, it is indicated by the crewmembers who do know the existence of the Lessons Learned database that the accessibility is not optimal. Access is only allowed via the secured NatoSwan network and the database is password protected.

Lessons Learned are mostly transferred using email or by face to face contact. During the interviews the most common reason, stated by the crewmembers, to call or send an email to their predecessor instead of gathering lessons from the Lessons Learned database, was the recentness of the information. *'You get the most recent information, information that is two months old instead of two years old'* (quote from interview).

⁶ The total percentage of officers is more than 100% while more answers were given to the question.

6.5 Conclusion

The research question *‘What are causes of problems in the transfer of Lessons Learned at the Dutch Navy?’* has been answered in this chapter. In answering this question the common causes of problems in knowledge transfer, described in chapter four, are used.

Causes of problems in knowledge transfer at the Dutch Navy are categorized into shortcomings in social networks; lack of trust in the shared knowledge or trust in the person that shares the knowledge; an organizational culture that doesn’t facilitate knowledge transfer; or an unbalance between knowledge management and organizational learning.

Social networks are important because crewmembers of the Dutch Navy are working close together in sometimes-dangerous situations. Job rotation every three years is a standard phenomenon at the Dutch Navy. Job rotation does not support the stability of networks and therefore does not benefit the depth of the transferred Lessons Learned. On the other hand, job rotation might contribute to the network size because more connections might result in the transfer of Lessons Learned among more crewmembers. Officers are more aware of whom to contact to gather Lessons Learned than non commissioned officers, corporals and sailors. Furthermore, crewmembers of the Dutch Navy do often have the same goals, which might increase the transfer of Lessons Learned.

Lessons Learned from the database and from colleagues are trusted by the crewmembers. Trusting Lessons Learned from colleagues might be a result of the strong relation between crewmembers on a specific vessel.

The Lessons Learned the crewmembers get from their predecessors or from their colleagues are valuable for the execution of a new training or mission. Although, there are non-commissioned officers who have remarks about the way some officers are acting upon the Lessons Identified they delivered to them.

The Dutch Navy has a Lessons Learned database where Lessons Learned are stored. Most crewmembers did not even know the existence of a Lessons Learned database, but are willing to use such a database. Some crewmembers that provided Lessons Identified have the feeling that nothing is done with their lessons because they did not get any feedback. Not obtaining feedback might result in a lack of motivation to provide new Lessons Identified.

The different problems are mostly related to two different causes, namely to organizational culture and the gap between knowledge management and organizational learning.

7 Discussion

In the conclusion section of this chapter the main research question will be answered. Furthermore the limitations of this study are discussed and this chapter ends with several suggestions for further research.

7.1 Conclusion

This study tried to find an answer to the question *‘What is the current situation with regard to the transfer of Lessons Learned within the Dutch Navy of personnel who have been sent, or will be sent, on a mission and what are the problems and causes of these problems in the transfer of Lessons Learned’*.

To describe the current situation with regard to the transfer of Lessons Learned, a conceptual model of knowledge transfer is used. The essential elements of this model are acquisition, communication, acceptance and assimilation. Crewmembers of the Dutch Navy gather Lessons Learned mostly informal, from colleagues of their own vessel. In addition, Lessons Learned are also collected, but to a lesser extent through contact with predecessors and during formal briefings. The communication channels used by these crewmembers are, in descending order, face-to-face, email and telephone. Only a few number of crewmembers (n=16) used the Lessons Learned database to gather Lessons Learned. Besides, crewmembers indicate that they do not get feedback on their suggested Lessons Identified.

In conclusions, problems relating to the transfer of Lessons Learned are: (1) there is little use of the Lessons Learned database; (2) Lessons Learned are mostly transferred informal, resulting is Lessons Learned that are not stored and that are not available for everyone; (3) crewmembers do not get feedback on suggested lessons identified.

In the literature four main causes of problems in knowledge transfer are known. These causes are related to social networks, trust, organizational culture and the gap between knowledge management and organizational learning. With the exception of ‘trust’ these causes are applicable to the Dutch Navy. Both colleagues and the Lessons Learned database are trusted resources for the crewmembers and therefore ‘trust’ is not seen as a cause of problems in knowledge transfer.

Most Lessons Learned are transferred informally due to the strong social networks at the Dutch Navy. The crewmembers know whom to contact to gather Lessons Learned. During this informal knowledge transfer process, knowledge might be lost because the lessons learned are often not stored and therefore not embedded into the core routines of the organization. The gap between organizational learning and knowledge management results in insufficient communication about Lessons Learned. Most crewmembers do not know the existence of a Lessons Learned database and are not satisfied about the feedback on suggested Lessons Identified.

7.2 Limitations

Like every academic research, this study has its limitations. This section outlines these different limitations and their effects on this study.

As a first limitation, the four subjects related to the different causes of problems in knowledge transfer, as a result from the literature study, are very broad and might be seen as studies on its own. For the scope of this study it was not possible to fully examine these subjects in-depth. Therefore a global description of each of these subjects was given and some elements of these subjects might be overlooked. Furthermore, the literature used to describe the causes of problems in knowledge transfer overlaps partly because of the broadness of these causes. Lack of a clear distinction between the different causes might result in confusion about relating the different problems to the different causes of these problems.

The second limitation is related to the interviews with crewmembers from Hr. Ms. De Ruyter. The interviews were conducted with officers and non-commissioned officers, no soldiers or corporals were interviewed. As a result, in-depth information of soldiers and corporals was not available and therefore the experiences and knowledge of these soldiers and corporals did not contribute in formulating the questions in the questionnaire. Quotes used in chapter five and six of this thesis are only from non-commissioned officers and officers.

The third limitation is about the response rate. Only 17 out of around 200 crewmembers of Hr. Ms. Zuiderkruis filled out the questionnaire. As a result the answers given by those crewmembers are not compared to the answers given by crewmembers of Hr. Ms. Tromp but are combined with the answers given by crewmembers of Hr. Ms. Tromp.

Fourthly, the questionnaire is filled in by crewmembers from different vessels, Hr. Ms. Zuiderkruis and Hr. Ms. Tromp. Both vessels went on an anti-piracy mission but Hr. Ms. Zuiderkruis was under European command (operation Atalanta) and Hr. Ms. Tromp was under NATO command (operation Ocean Shield). Also the type of vessel is different, the Hr. Ms. Zuiderkruis is a supply frigate and Hr. Ms. Tromp is an air defense and command frigate. Those differences might have effect on the answers given by the crewmembers, but because both vessels went on the same kind of mission these effects will hardly influence the result.

The fifth limitation is related to measuring trust by using the questionnaire. In the questionnaire a question has been asked about the trust in Lessons Learned. It would also be interesting to know to what degree the crewmembers trust the person from whom they got the Lessons Learned.

Although the definition of Lessons Learned is described in the questionnaire, a sixth limitation is the clarity of the definition of Lessons Learned. There is also a definition of Lessons Identified, which is used at the Dutch Navy. These definitions are mixed up by some crewmembers. Some crewmembers might have difficulties in making the definition of Lessons Learned concrete as well. For them it is probably not quite clear to answer the questions in the questionnaire and therefore they might choose often the neutral option.

At last, worth mentioning is that most crewmembers did have experience with an anti-piracy mission, because the Dutch Navy contributes since 2008 to these kind of missions. As a result, the crewmembers might have filled out the questionnaire differently when it was their first anti-piracy mission.

7.3 Suggestions for further research

The research methods used for this study have both advantages and disadvantages. Instead of using interviews and questionnaires, observations could be used to collect the information about transferring Lessons Learned at the Dutch Navy. An advantage of using observations is that it allows the researcher to see the interactions and details of the transfer of Lessons Learned in order to provide more in-depth knowledge. A further study with more focus on interaction between crewmembers is therefore suggested.

Another suggestion for further research is related to other parts of the Defense Forces or to Defense Forces of other countries. It would be interesting to compare the Dutch Navy to these other Forces and interchange knowledge about the transfer of Lessons Learned.

It would also be of interest to further explore the different ways in which the Dutch Navy could support the transfer of Lessons Learned. Take into account the way in which crewmembers transfer Lessons Learned and the importance of storing and further sharing of Lessons Learned.

8 Recommendations

This chapter describes the recommendations as a result of this study, which aims to improve the transfer of Lessons Learned at the Dutch Navy. The recommendations are addressed in ascending order related to the amount of effort that is needed to achieve the recommendation.

Providing feedback on suggested lessons identified & writing procedures

Not resolving feedback on suggested Lessons Identified might result in a lack of motivation of crewmembers to provide these Lessons Identified for a future operation report. Feedback on the Lessons Identified is given to the commander of a vessel at the time the 'Section Lessons Learned' got feedback from their subject matter experts. The commander of a vessel could transfer the feedback on the Lessons Identified hierarchically to every person that went on that particular mission. At least the crewmembers that provided the Lessons Identified should be posted. Also when no actions are taken to the Lessons Identified, the crewmembers that provide these Lessons Identified should be posted about the reason for not taking action.

While a not optimal execution of the process of the transfer of Lessons Learned at the Dutch Navy could be a cause of this insufficient feedback, writing procedures for this process might also resolve this problem.

Spread awareness of the Lessons Learned database

Most crewmembers did not know of the existence of the Lessons Learned database. Some of these crewmembers stated they are willing to use this database, but do not know how. Spreading information about the existence of the database and how the database can be used might solve the problem. Using email or sending an information folder to all crewmembers might spread the awareness of the existence of such a database. Furthermore the accessibility of the Lessons Learned database might be improved.

Facilitation of informal knowledge transfer

Lessons Learned are frequently transferred informal to colleagues, which is a positive occurrence while implicit knowledge is transferred as well. A negative effect of informal transfer of Lessons Learned is that these Lessons Learned will not be stored and further transferred to other personnel of the Dutch Navy. When informal knowledge transfer would be facilitated, the negative effects of informal transfer of Lessons Learned would be minimized. Organizing communities of practice might be a way of facilitating this informal knowledge transfer.

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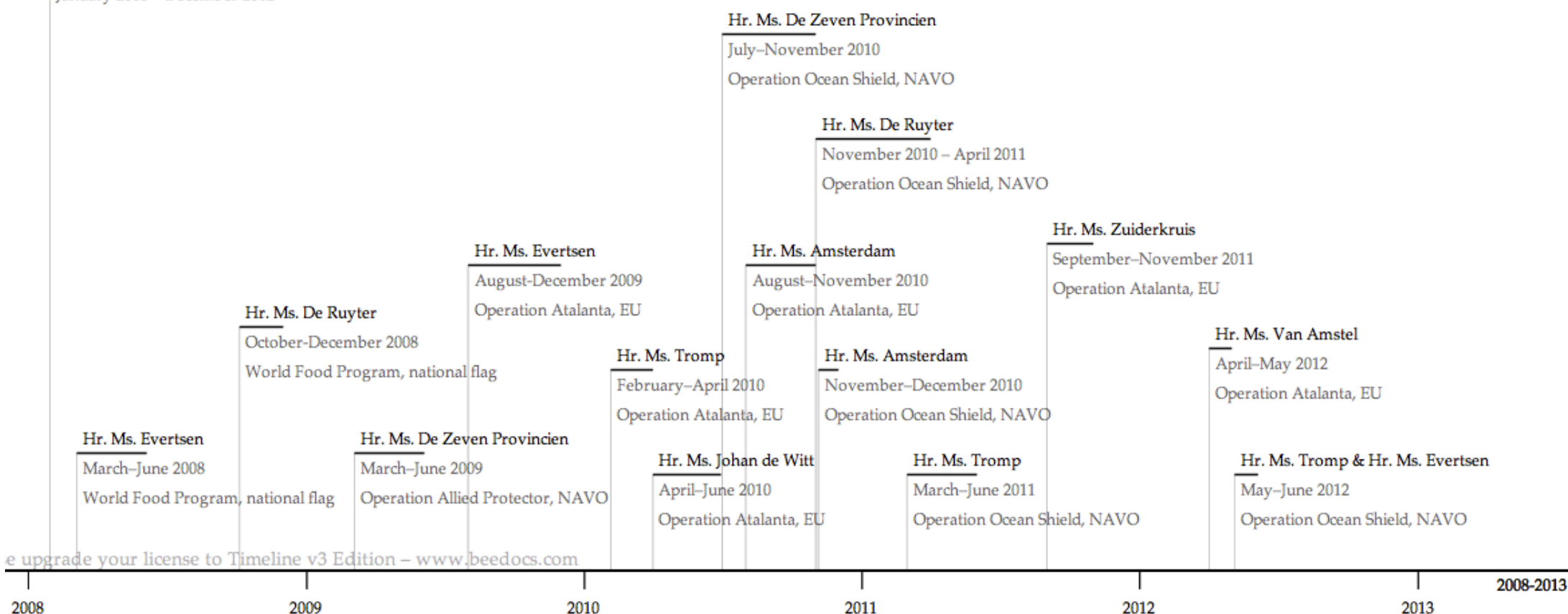
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Appendix 1 Timeline: Dutch Navy vessels on anti-piracy mission

Dutch Navy vessels on anti-piracy mission

January 2008 – December 2012



Appendix 2 Interview scheme, protocol & questions

Interview Scheme Hr. Ms. De Ruyter

		Operational service	Logistic service	Technical service	Weapon Technical service
Number of interviewees by rank	<i>Officers</i>	5	1	1	2
	<i>Non-commissioned officer</i>	4	3	1	0
Gender	<i>Male</i>	6	2	2	2
	<i>Female</i>	3	2	0	0
Average date of birth		1977	1970	1970	1968

Interview protocol Hr. Ms. De Ruyter

Volgende gegevens noteren:

Naam	
Tijdstip/ datum	
Plaats	
Geboortedatum	
Geslacht	
Functie	
Aantal jaren in dienst	
Rang	
Schip	
Dienstvak	
Duur van het opwerktraject	
Datum start van de missie	

Als eerste zal ik mezelf even voorstellen, mijn naam is Anne-Fleur Hemmer, ik studeer Bestuurskunde aan de Universiteit Twente en ben bezig met de afronding van mijn master Public Safety Governance, oftewel Veiligheidskunde. Op dit moment ben ik bezig met het schrijven van mijn scriptie bij TNO en valt mijn onderzoek binnen het project Duurzame Missiepreparatie, waar samen met de Marine aan gewerkt wordt.

Naast mijn studie ben ik reservist van de Koninklijke Luchtmacht en heb ik dus enige ervaring met de militaire wereld. Ik heb hiervoor een screening (B-niveau) gehad en weet hoe ik met eventuele geheime of confidentiële informatie om moet gaan.

De focus van mijn onderzoek wil ik voor de Marine is Lessons Learned. Ik wil inzichtelijk maken hoe de Lessons Learned terecht komen bij diegenen die iets aan deze lessen hebben en of het mogelijk is om dit te optimaliseren. Hierbij kijk ik vooral naar de informatiebehoefte en de manieren van informatieoverdracht op het niveau van de individuele militair.

Aangezien u net terug bent van een missie met de Hr. Ms. De Ruijter naar Somalië en hier wellicht ervaring mee heeft opgedaan tijdens uw opwerktraject, hoop ik door middel van dit interview een beter inzicht te krijgen in de ervaringen, wensen en behoeften die er zijn op het gebied van Lessons Learned. Ik ga u vragen stellen over hoe u dit ervaren heeft in de voorbereiding van uw missie. Ook zal ik vragen of u nu u de missie achter de rug heeft nog ideeën heeft over hoe idealiter Lessons Learned overgedragen kunnen worden.

Dit interview wordt opgenomen, zodat er geen informatie verloren gaat en ik me beter kan concentreren op het interview. Het geluidsbandje zal ik gebruiken om de informatie uit het interview zo correct mogelijk te verwerken en de gespreksgegevens worden na afloop van de resultaatsverwerking gewist. Heeft iemand hier een probleem mee?

De resultaten van de interviews zullen anoniem verwerkt worden en de gespreksgegevens zullen alleen door mij worden ingezien. In het verslag van mijn onderzoek zullen alleen conclusies worden opgenomen die uit meerdere interviews gezamenlijk getrokken kunnen worden. Informatie die voortkomt uit het interview wordt niet direct gecommuniceerd naar TNO of de Marine.

Heeft u nog vragen? Dan gaan we nu beginnen met het interview.

ACHTERGROND INFORMATIE

Hoe ziet de invulling van uw functie eruit?

- Wat is uw taak?
- Wat zijn uw verantwoordelijkheden?

VERKRIJGEN VAN LESSONS LEARNED

Hoe heeft u zich voorbereid op de missie als het gaat om het inwinnen van informatie van uw collega's uit eerdere missies?

- Heeft u gezocht naar informatie van voorgangers over de missie?
- Hoe heeft u de voor u relevante informatie gevonden?
- Hoe wist u wat voor u relevant zou zijn?
- Is er informatie bij u gekomen zonder dat u behoefde te zoeken?
- Wie nam het initiatief tot het uitwisselen van Lessons Learned?

Kunt u een concreet voorbeeld geven van hoe u toegang tot bepaalde Lessons Learned tijdens uw missie voorbereiding hebt gekregen?

FILTEREN OP RELEVANTE INFORMATIE

Welke informatie hebben jullie gekregen tijdens de missie voorbereiding van jullie voorgangers?

- Hoe hebben jullie deze informatie gekregen?
- Wanneer was bepaalde informatie nuttig en/of onmisbaar?
- Kon u de waarde van deze informatie van tevoren goed inschatten? Waarom wel/niet?
- Wat vond u belangrijk aan deze informatie uitwisseling?
- Wat was achteraf de waarde van de informatie die u gekregen heeft?

Kunt u een concreet voorbeeld geven van een Lessons Learned die u succesvol hebt gebruikt in het missiegebied?

GEMISTE LESSONS LEARNED

Heeft u achteraf relevante Lessons Learned gemist?

- Heeft u iets opnieuw moeten uitvinden?
- Hoe had dit voorkomen kunnen worden?
- Waar had je deze informatie kunnen vinden?
- Wie had hierin de verantwoordelijkheid?

Kunt u een concreet voorbeeld geven van een Lessons Learned die u had kunnen gebruiken in het missiegebied, maar die u niet hebt gehad?

LESSONS LEARNED DATABASE

Wat is uw ervaring met de Lessons Learned database of met gegevens die verstrekt zijn uit deze database?

- Heeft u weleens gebruik gemaakt van de Lessons Learned database?
- Naar welke informatie bent u op zoek gegaan?
- Wat heeft u aan deze informatie gehad?
- Waar heeft u deze informatie voor gebruikt?

EIGEN ERVARINGEN DELEN

Op welke manier bent u zelf betrokken geweest bij het delen van uw eigen ervaringen?

- Ben je zelf betrokken bij het delen van eigen ervaringen?
- Hoe is dit geregeld?(Op welke manier gebeurt dit?)
- Wat vinden jullie belangrijk aan het doorgeven van ervaringen?

OPTIMALISATIE LESSONS LEARNED

Wat zouden uw aanbevelingen zijn rondom het vinden en overbrengen van Lessons Learned?

- Wat zou beter kunnen?
- Hoe zou dit beter kunnen?
- Wie zou(den) hiervoor verantwoordelijk moeten zijn?
 - Organisatie;
 - Persoonlijk.

Kunt u een concreet voorbeeld geven van een manier om het gebruik van Lessons Learned te optimaliseren?

Appendix 3 Summary of Interviews at Hr. Ms. De Ruyter

Op 24 en 25 mei 2011 heb ik in Den Helder, op het schip Hr. Ms. De Ruyter, in totaal met 17 personen gesproken over hun ervaringen met Lessons Learned tijdens hun missievoorbereiding. Tevens heb ik deze personen vragen gesteld over het delen van eigen ervaringen en Lessons Learned na afloop van de missie naar Somalië. De 17 personen heb ik gesproken in verscheidene groepsgrootten, variërend van één tot vier personen.

Hieronder beschrijf ik de opvallendste en meest voorkomende uitkomsten van de interviews. Deze uitkomsten worden voor officieren en onderofficieren apart uitgewerkt aangezien tussen deze groepen een verschil zit in de wijze waarop zij hun taak uitvoeren en anders omgaan met Lessons Learned.

Officieren

De officieren hebben, op één persoon na, regelmatig contact gehad met hun voorgangers in de vorm van bellen en mailen. “Wat je voornamelijk doet is je counter part op het schip voor je zo goed mogelijk uithoren over wat je nodig hebt en hoe je jezelf het beste kan voorbereiden”. De reden die wordt aangegeven voor het bellen en mailen met een voorganger is dat de informatie recent is, sneller is en dat diegene precies weet wat knelpunten kunnen gaan worden. Naast contact met voorgangers worden het lezen van operatieverslagen van eerdere missies, het bijwonen van briefings en planning meetings, langsgaan bij de N structuur van MarSitCen en eigen ervaringen genoemd als vormen waarop is voorbereid op de anti-piraterij missie naar Somalië.

Van de negen officieren die zijn geïnterviewd hebben twee personen gebruik gemaakt van de database voorafgaand aan de missie, twee personen hebben de database gebruikt om na afloop van de missie te kijken naar het format waarop de Lessons Learned worden aangeleverd en vijf personen hebben niet in de database gekeken. De meest voorkomende reden dat de database niet gebruikt is onder de Technische Dienst (TD) en Wapentechnische Dienst (WD), is dat bij hen het gevoel heerst dat de database vooral gericht is op de Operationele Dienst (OD). De TD en WD geven aan dat ze veel contact hebben met Materieel Logistiek (MatLog) en minder tot niet met de N structuur van MarSitCen. “Waar je misschien wel voor zou kunnen zorgen, zodat de database werkt, is dat MatLog er ook actief gebruik van gaat maken”.

Tijdens de interviews zijn suggesties gegeven om de gebruikersvriendelijkheid van de database te optimaliseren. Het aanvragen van een wachtwoord wordt gezien als een nadeel. “Ik zit nu op de homepage, maar geen idee waar de Lessons Learned database te vinden is. Ik weet niet precies waar het staat en kan het niet vinden, dan houd ik er snel mee op”. Daarnaast is aangegeven dat het invoeren van bepaalde Lessons Learned in een te uitgebreid format moet worden gegoten en daardoor niet flexibel is, wat de motivatie voor het invullen ten nadelen komt. De officieren geven tevens aan dat het systeem traag is omdat er informatie instaat tot en met het jaar 2009. Informatie over 2010 en 2011 kan niet worden gevonden in de database.

Onderofficiëren

Op een enkeling na hebben alle onderofficiëren contact gehad met hun voorganger, of een collega met dezelfde functie die op een anti-piraterij missie is geweest. De reden dat een persoon geen contact met zijn voorganger heeft gehad was het gebrek aan tijd.

Zeven onderofficiëren hebben nog nooit in de database gekeken of de mogelijkheid hiertoe gehad, één persoon heeft gekeken wat er in de database te vinden is.

Uit de interviews blijkt dat de onderofficiëren het gevoel hebben dat er niks wordt gedaan met de Lessons Learned die zij invoeren en dat er niet naar hun geluisterd wordt. Ze hebben het gevoel dat de praktische zaken, die zij bespreekbaar willen maken, minder belangrijk worden gevonden dan management zaken. “Je geeft heel veel dingen aan en daar gebeurt gewoon weinig mee en zodra een commandant zegt tegen Den Haag dat er iets moet veranderen, dan kan het ineens wel”.

De onderofficiëren zouden graag meer betrokken willen worden bij het Lessons Learned proces. “Wat ik denk dat zou werken is dat je de hele club uitnodigt. Diegene bij wie de Lessons Learned terecht komt, die zou moeten zeggen ‘jongens kom eens langs en vertel hoe het zit’.”

Een aantal zien Lessons Learned graag terugkomen in de vorm van een operatieorder, een draaiboek met Lessons Learned als het levende deel ervan. “Wij zouden dit eerder lezen dan dat we op zoek gaan in een database, want in een draaiboek staat hoe je het moet doen en dan kan je het uitvoeren.”

Wat bij zowel uit de interviews met de officieren als met de onderofficiëren blijkt is dat er veel waarde wordt gehecht aan informele contacten. “Geen betere Lessons Learned dan informele praatjes. We ritselen alles.”

Uit de interviews blijkt dat de geïnterviewde personen het belangrijk vinden om Lessons Learned te delen. Ze vinden het belangrijk om ervaringen en kennis van een vorig schip te krijgen, maar zijn zelf ook actief bezig geweest met het delen van hun eigen ervaringen en kennis aan de Hr. Ms. Tromp. “Er is niks belangrijker dan zoveel mogelijk informatie met elkaar te delen”.

Alle geïnterviewde personen zien het nut in van een database, maar op de huidige gang van zaken zien ze ruimte voor verbetering. Zowel officieren als onderofficiëren geven aan dat ze graag een terugkoppeling willen zien van de Lessons Learned die ze hebben aangeleverd. “Het is niet inzichtelijk wat het vervolgtraject oplevert en wat het mij oplevert als gebruiker over een jaar, als ik weer die kant op moet”. “Als je een terugkoppeling krijgt van je voorstel, dat zou mij al veel meer voldoening geven. Er kan natuurlijk ook gezegd worden dat het een leuk plan is maar te duur, dat is ook goed.”

Appendix 4 **Survey Hr. Ms. Zuiderkruis**



Vragenlijst – Lessons Learned Hr. Ms. Zuiderkruis

Welkom bij de vragenlijst over Lessons Learned voor Hr. Ms. Zuiderkruis. De vragen die worden gesteld gaan over het verkrijgen van Lessons Learned voor en tijdens de huidige missie naar de wateren rond Somalië. Aan de hand van deze enquête wordt getracht inzicht te krijgen in de overdracht van Lessons Learned en wordt er gekeken op welke vlakken verbeteringen mogelijk zijn.

Het invullen van de vragenlijst duurt ongeveer 10 minuten. De antwoorden worden vertrouwelijk behandeld en uw anonimiteit wordt gewaarborgd.

De vragenlijst bestaat uit feiten en meningen vragen. De meningen vragen variëren van geheel mee oneens tot geheel mee eens. Bedenk voor iedere stelling wat van toepassing is op u en vink de juiste score aan op de schaal die het beste uw mening weergeeft. Let op: uw oordeel moet de feitelijke situatie weerspiegelen en niet de meest wenselijke of noodzakelijke situatie. Daarnaast hoeft u niet te lang na te denken over het beantwoorden van de meningen vragen; uw eerste ingeving is meestal de juiste.

Wij verzoeken u ALLE vragen te beantwoorden, met uitzondering van de vragen die waarvan wordt aangegeven dat ze overgeslagen mogen worden. Dit is belangrijk omdat de vragenlijst anders niet gebruikt kan worden voor het onderzoek.

Bedankt alvast voor uw tijd en moeite!

Deel 1: Persoonsgegevens

Om vergelijkingen te kunnen maken is het van belang een aantal persoonsgegevens van u te hebben. Bij keuzevragen, zet een kruisje achter het juiste antwoord.

1. Wat is uw geboortejahr?

.....

2. Wat is uw geslacht?

Man	
Vrouw	

3. Wat is uw rang?

.....

4. Hoeveel jaar bent u in dienst bij de Koninklijke Marine?

.....

Operationele Dienst	
Logistieke Dienst	
Technische Dienst	
Wapentechnische Dienst	
Korps Mariniers	
Bijzondere Diensten	
Overig	

namelijk

namelijk

5. Wat is uw dienstvak?

6. Wat is uw functie tijdens deze anti-piraterij missie van Hr. Ms. Zuiderkruis?

.....

7. Hoeveel jaar ervaring heeft u op deze functie?

.....

8. Hoe ervaren vindt u uzelf in deze functie?

Geheel onervaren	
Ervaren	
Neutraal	
Ervaren	
Geheel ervaren	

9. Hoeveel keer bent u op een anti-piraterij missie geweest (inclusief huidige missie)?

.....

Deel 2: Feiten vragen over het ontvangen van Lessons Learned

In deze enquête is er sprake van een Lessons Learned wanneer er, naar aanleiding van een observatie/ ervaring, de nodige corrigerende acties hebben plaatsgevonden en nadat dit verwerkt is in voorschriften/ werkwijzen of anderszins verbeteringen tot gevolg hebben gehad. Dit geldt voor zowel het persoonlijke vlak als op organisatorisch niveau.

De volgende vragen hebben betrekking op het contact wat u met collega's en/of voorgangers heeft gehad.

Voorgangers zijn diegene die hetzelfde werk als uzelf hebben gedaan alleen dan op een eerdere missie.

Collega's van Hr. Ms. Zuiderkruis zijn diegene die nu meevaren op Hr. Ms. Zuiderkruis.

Collega's in het algemeen zijn alle personen die werkzaam zijn bij de Koninklijke Marine.

10. Met welke collega's heeft u contact gehad tijdens uw missievoorbereiding over Lessons Learned? (meerdere antwoorden mogelijk)

Collega's van Hr. Ms. Zuiderkruis	
Mijn voorganger(s)	
Leidinggevende	
Collega's van andere schepen	
Collega's aan wal	
Overig	

namelijk

11. Hoe vaak heeft u tijdens uw missievoorbereiding contact gehad met uw voorganger(s) over Lessons Learned?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	



GA VERDER MET VRAAG 15

12. Op welke manier heeft u contact gehad met voorganger(s)? (meerdere antwoorden mogelijk)

Telefonisch	
E-mail	
Face to Face	
Brief	
Fax	
Social Media	
Overig	

namelijk.....

13. Als u gebruik heeft gemaakt van social media, welke vorm(en) betrof dit voor het verkrijgen van Lessons Learned van uw voorganger(s)? (meerdere antwoorden mogelijk)

Niet van toepassing	
Twitter	
Facebook	
Hyves	
Blogs	
Forum	
LinkedIn	
Overig	

namelijk

14. Met voorganger(s) van welk schip heeft u contact gehad? (meerdere antwoorden mogelijk)

Hr. Ms. Tromp	
Hr. Ms. De Ruyter	
Hr. Ms. Amsterdam	
Hr. Ms. Zeven Provinciën	
Overig	

namelijk

15. Hoe vaak heeft u tijdens uw missievoorbereiding contact gehad met collega's van Hr. Ms. Zuiderkruis over Lessons Learned?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	



GA VERDER MET VRAAG 18

16. Op welke manier(en) heeft u contact gehad met collega's van Hr. Ms. Zuiderkruis over Lessons Learned? (meerdere antwoorden mogelijk)

Telefonisch	
E-mail	
Face to Face	
Brief	
Fax	
Social Media	
Overig	

namelijk

17. Als u gebruik heeft gemaakt van social media, welke vorm(en) betrof dit voor het verkrijgen van Lessons Learned van collega's van Hr. Ms. Zuiderkruis? (meerdere antwoorden mogelijk)

Niet van toepassing	
Twitter	
Facebook	
Hyves	
Blogs	
Forum	
LinkedIn	
Overig	

namelijk

De Marine heeft een Lessons Learned database. In deze database worden Lessons Learned opgeslagen en kan er worden gezocht naar relevante Lessons Learned door personeel van de Marine. De volgende vragen betreffen feiten vragen die betrekking hebben op de Lessons Learned database.

18. Hoe vaak heeft u tijdens deze missievoorbereiding in de Lessons Learned database gekeken?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	

} GA VERDER MET VRAAG 20

19. Waarom heeft u nooit in de Lessons Learned database gekeken?

Wist niet van het bestaan af van de database	
Geen tijd om in de database te kijken	
Geen toegang tot de database	
Database bevat oude informatie	
Database is niet gebruiksvriendelijk	
Zie het nut niet in van het kijken op de database	
Verkrijg de Lessons Learned op een andere manier	
Overig	

namelijk
.....

De onderstaande vraag heeft betrekking op overige manieren waarop Lessons Learned verkregen kunnen worden.

20. Op welke overige manier(en) heeft u Lessons Learned verkregen? (meerdere antwoorden mogelijk)

Internetsites	
Openbare bronnen	
Formele briefings	
Hand Over Take Over (HOTO) files	
(Hand)boeken	
Overig	

namelijk

Deel 3: Meningen vragen over het ontvangen van Lessons Learned

In deze enquête is er sprake van een Lessons Learned wanneer er, naar aanleiding van een observatie/ ervaring, de nodige corrigerende acties hebben plaatsgevonden en nadat dit verwerkt is in voorschriften/ werkwijzen of anderszins verbeteringen tot gevolg hebben gehad. Dit geldt voor zowel het persoonlijke vlak als op organisatorisch niveau.

Bij de volgende stellingen dient u uw mening te geven over een aantal stellingen. Er zijn bij elke stelling zes keuzemogelijkheden die variëren van geheel mee oneens tot geheel mee eens, met daarnaast de mogelijkheid om te kiezen voor 'niet van toepassing' (n.v.t).

21. De volgende stellingen hebben betrekking op het contact met collega's/ voorgangers.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik hecht waarde aan Lessons Learned die ik van mijn collega's op Hr. Ms. Zuiderkruis heb gekregen.						
Ik hecht waarde aan Lessons Learned die ik van mijn voorganger(s) heb gekregen.						
Ik vind het prettig om Lessons Learned te krijgen van anderen.						
Ik zie het nut in van het verkrijgen van Lessons Learned van anderen.						
Ik vind dat ik gebruik maak van de Lessons Learned die ik van anderen heb gekregen.						
Ik vind de drempel laag om contact te zoeken met anderen over Lessons Learned.						
Ik vertrouw de Lessons Learned die ik van anderen heb gekregen.						
Ik stel het niet op prijs om zonder het te vragen Lessons Learned van anderen te krijgen.						

Toelichting:

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22. De volgende stellingen hebben betrekking op de Lessons Learned database.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik hecht waarde aan de Lessons Learned uit de database.						
Ik vind de database gebruiksvriendelijk.						
Ik vind de database toegankelijk.						
Ik zie het nut in van de database.						
Ik vind de Lessons Learned makkelijk te vinden in de database.						
Ik vind het moeilijk om Lessons Learned uit de database toe te passen in de praktijk.						
Ik vind het prettig om Lessons Learned uit de database te halen.						
Ik vind dat ik gebruik maak van de Lessons Learned die ik in de database heb gevonden.						
Ik vind de drempel laag om in de database te gaan kijken.						
Ik vertrouw de Lessons Learned die ik in de database heb gevonden.						

Toelichting:

.....

.....

.....

.....

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik vind dat ik tijdens mijn missie essentiële zaken opnieuw heb moeten uitvinden.						
Ik denk dat het voorkomen had kunnen worden dat ik essentiële zaken opnieuw moest uitvinden.						
Ik vind dat ik Lessons Learned gemist heb tijdens mijn missie.						
Ik denk dat de Koninklijke Marine als organisatie leert van aangedragen Lessons Learned.						
Ik vind het moeilijk om Lessons Learned te vinden.						
Het is mij duidelijk bij wie ik kan aankloppen voor het verkrijgen van Lessons Learned.						

23. De volgende stellingen gaan over mogelijk gemiste Lessons Learned.**Toelichting:**

.....

.....

.....

.....

De laatste twee vragen zijn open vragen en geven u de mogelijkheid om het een en ander toe te lichten, een opmerking te maken of om uw eigen ideeën te delen.

24. Wat zou er volgens u verbeterd kunnen worden in de manier waarop u Lessons Learned heeft ontvangen of de manier waarop Lessons Learned worden overgedragen?

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25. Voor eventuele aanvullingen en/of opmerkingen is hieronder ruimte beschikbaar.

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EINDE: bedankt voor het invullen van de vragenlijst!

Appendix 5 Survey Hr. Ms. Tromp



Vragenlijst – Lessons Learned Hr. Ms. Tromp

Welkom bij de vragenlijst over Lessons Learned voor Hr. Ms. Tromp. De vragen die worden gesteld gaan over het verkrijgen en delen van Lessons Learned voor, tijdens en na de missie van Hr. Ms. Tromp naar de wateren rond Somalië. Aan de hand van deze enquête wordt getracht inzicht te krijgen in de overdracht van Lessons Learned en wordt er gekeken op welke vlakken verbeteringen mogelijk zijn.

Het invullen van de vragenlijst duurt ongeveer 10 minuten. De antwoorden worden vertrouwelijk behandeld en uw anonimiteit wordt gewaarborgd.

De vragenlijst bestaat uit feiten en mening vragen. De mening vragen variëren van geheel mee oneens tot geheel mee eens. Bedenk voor iedere stelling wat van toepassing is op u en vink de juiste score aan op de schaal die het beste uw mening weergeeft. Let op: uw oordeel moet de feitelijke situatie weerspiegelen en niet de meest wenselijke of noodzakelijke situatie. Daarnaast hoeft u niet te lang na te denken over het beantwoorden van de mening vragen; uw eerste ingeving is meestal de juiste.

Wij verzoeken u ALLE vragen te beantwoorden, met uitzondering van de vragen waarvan wordt aangegeven dat ze overgeslagen mogen worden. Dit is belangrijk omdat de vragenlijst anders niet gebruikt kan worden voor het onderzoek.

Bedankt alvast voor uw tijd en moeite!

Deel 1: Persoonsgegevens

Om vergelijkingen te kunnen maken is het van belang een aantal persoonsgegevens van u te hebben. Bij keuzevragen, zet een kruisje achter het juiste antwoord.

1. Wat is uw geboortejaar?

.....

2. Wat is uw geslacht?

Man	
Vrouw	

3. Wat is uw rang?

.....

4. Hoeveel jaar bent u in dienst bij de Koninklijke Marine?

.....

5. Wat is uw dienstvak?

Operationele Dienst		
Logistieke Dienst		
Technische Dienst		
Wapentechnische Dienst		
Korps Mariniers		
Bijzondere Diensten		namelijk
Overig		namelijk

6. Wat is uw functie geweest tijdens de anti-piraterij missie van Hr. Ms. Tromp?

.....

7. Hoeveel jaar ervaring heeft u op deze functie?

.....

8. Hoe ervaren vindt u uzelf in deze functie?

Geheel onervaren	
Ervaren	
Neutraal	
Ervaren	
Geheel ervaren	

9. Hoeveel keer bent u op een anti-piraterij missie geweest ?

.....

Deel 2: Feiten vragen over het ontvangen van Lessons Learned

In deze enquête is er sprake van een **Lessons Learned** wanneer er, naar aanleiding van een observatie/ervaring, de nodige corrigerende acties hebben plaatsgevonden en nadat dit verwerkt is in voorschriften/werkwijzen of anderszins verbeteringen tot gevolg hebben gehad. Dit geldt voor zowel het persoonlijke vlak als op organisatorisch niveau.

De volgende vragen hebben betrekking op het contact wat u met collega's en/of voorgangers heeft gehad. Voorgangers zijn diegene die hetzelfde werk als uzelf hebben gedaan alleen dan op een eerdere missie. Collega's van Hr. Ms. Tromp zijn diegene die met u meegevaren hebben tijdens de anti-piraterij missie. Collega's in het algemeen zijn alle personen die werkzaam zijn bij de Koninklijke Marine.

10. Met welke collega's heeft u contact gehad tijdens uw missievoorbereiding over Lessons Learned? (meerdere antwoorden mogelijk)

Collega's van Hr. Ms. Tromp	
Mijn voorganger(s)	
Leidinggevende	
Collega's van andere schepen	
Collega's aan wal	
Overig	

namelijk

11. Hoe vaak heeft u tijdens uw missievoorbereiding contact gehad met uw voorganger(s) over Lessons Learned?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	

GA VERDER MET VRAAG 15

12. Op welke manier heeft u contact gehad met voorganger(s)? (meerder antwoorden mogelijk)

Telefonisch	
E-mail	
Face to Face	
Brief	
Fax	
Social Media	
Overig	

namelijk

13. Als u gebruik heeft gemaakt van social media, welke vorm(en) betrof dit voor het verkrijgen van Lessons Learned van uw voorganger(s)? (meerdere antwoorden mogelijk)

Niet van toepassing	
Twitter	
Facebook	
Hyves	
Blogs	
Forum	
LinkedIn	
Overig	

namelijk

14. Met voorganger(s) van welk schip heeft u contact gehad? (meerdere antwoorden mogelijk)

Hr. Ms. De Ruyter	
Hr. Ms. Amsterdam	
Hr. Ms. Zeven Provinciën	
Overig	

namelijk

15. Hoe vaak heeft u tijdens uw missievoorbereiding contact gehad met collega's van Hr. Ms. Tromp over Lessons Learned?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	



GA VERDER MET VRAAG 18

16. Op welke manier(en) heeft u contact gehad met collega's van Hr. Ms. Tromp over Lessons Learned? (meerdere antwoorden mogelijk)

Telefonisch	
E-mail	
Face to Face	
Brief	
Fax	
Social Media	
Overig	

namelijk

17. Als u gebruik heeft gemaakt van social media, welke vorm(en) betrof dit voor het verkrijgen van Lessons Learned van collega's van Hr. Ms. Tromp? (meerdere antwoorden mogelijk)

Niet van toepassing	
Twitter	
Facebook	
Hyves	
Blogs	
Forum	
LinkedIn	
Overig	

namelijk

De Marine heeft een Lessons Learned database. In deze database worden Lessons Learned opgeslagen en kan er worden gezocht naar relevante Lessons Learned door personeel van de Marine. De volgende vragen betreffen feiten vragen die betrekking hebben op de Lessons Learned database.

18. Hoe vaak heeft u tijdens deze missievoorbereiding in de Lessons Learned database gekeken?

Nooit	
1 tot 3 keer	
4 tot 6 keer	
7 tot 9 keer	
10 keer of vaker	

} GA VERDER MET VRAAG 20

19. Waarom heeft u nooit in de Lessons Learned database gekeken?

Wist niet van het bestaan af van de database	
Geen tijd om in de database te kijken	
Geen toegang tot de database	
Database bevat oude informatie	
Database is niet gebruiksvriendelijk	
Zie het nut niet in van het kijken op de database	
Verkrijg de Lessons Learned op een andere manier	
Overig	

namelijk
.....

De onderstaande vraag heeft betrekking op overige manieren waarop Lessons Learned verkregen kunnen worden.

20. Op welke overige manier(en) heeft u Lessons Learned verkregen? (meerdere antwoorden mogelijk)

Internetsites	
Openbare bronnen	
Formele briefings	
Hand Over Take Over (HOTO) files	
(Hand)boeken	
Overig	

namelijk

Deel 3: Feiten vragen over het delen van Lessons Learned

De twee onderstaande vragen zijn de laatste feiten vragen en hebben betrekking op de manier waarop u Lessons Learned heeft gedeeld.

21. Aan wie heeft u uw eigen Lessons Learned doorgegeven? (meerdere antwoorden mogelijk)

Niemand	
Leidinggevende	
Collega's van Hr. Ms. Tromp	
Collega's van een ander schip	
Opvolger(s)	
Overig	

..... namelijk

22. Op welke manier(en) heeft u uw eigen Lessons Learned gedeeld met anderen?

Telefonisch	
E-mail	
Face to Face	
Brief	
Fax	
Social media	
Overig	

..... namelijk

Deel 4: Meningen vragen over het ontvangen van Lessons Learned

In deze enquête is er sprake van een **Lessons Learned** wanneer er, naar aanleiding van een observatie/ ervaring, de nodige corrigerende acties hebben plaatsgevonden en nadat dit verwerkt is in voorschriften/ werkwijzen of anderszins verbeteringen tot gevolg hebben gehad. Dit geldt voor zowel het persoonlijke vlak als op organisatorisch niveau.

Bij de volgende stellingen dient u uw mening te geven over een aantal stellingen. Er zijn bij elke stelling zes keuzemogelijkheden die variëren van geheel mee oneens tot geheel mee eens, met daarnaast de mogelijkheid om te kiezen voor 'niet van toepassing' (n.v.t). De volgende twee sets met stellingen gaan over het verkrijgen van Lessons Learned.

23. De volgende stellingen hebben betrekking op het contact met collega's/ voorgangers.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik hecht waarde aan Lessons Learned die ik van mijn collega's van Hr. Ms. Tromp heb gekregen.						
Ik hecht waarde aan Lessons Learned die ik van mijn voorganger(s) heb gekregen.						
Ik vind het prettig om Lessons Learned te krijgen van anderen.						
Ik zie het nut in van het verkrijgen van Lessons Learned van anderen.						
Ik vind dat ik gebruik maak van de Lessons Learned die ik van anderen heb gekregen.						
Ik vind de drempel laag om contact te zoeken met anderen over Lessons Learned.						
Ik vertrouw de Lessons Learned die ik van anderen heb gekregen.						
Ik stel het niet op prijs om zonder het te vragen Lessons Learned van anderen te krijgen.						

Toelichting (indien gewenst):

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.....

.....

.....

24. De volgende stellingen hebben betrekking op de Lessons Learned database. Indien u nog nooit van deze database gehoord heeft of nog nooit op deze database heeft gekeken kunt u alle stellingen beantwoorden met n.v.t.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik hecht waarde aan de Lessons Learned uit de database.						
Ik vind de database gebruiksvriendelijk.						
Ik vind de database toegankelijk.						
Ik zie het nut in van de database.						
Ik vind de Lessons Learned makkelijk te vinden in de database.						
Ik vind het moeilijk om Lessons Learned uit de database toe te passen in de praktijk.						
Ik vind het prettig om Lessons Learned uit de database te halen.						
Ik vind dat ik gebruik maak van de Lessons Learned die ik in de database heb gevonden.						
Ik vind de drempel laag om in de database te gaan kijken.						
Ik vertrouw de Lessons Learned die ik in de database heb gevonden.						

Toelichting (indien gewenst):

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.....

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik vind het belangrijk om Lessons Learned te delen met collega's van Hr. Ms. Tromp.						
Ik vind het belangrijk om Lessons Learned te delen met mijn opvolger(s).						
Ik voel me gestimuleerd om Lessons Learned met anderen te delen.						
Ik beschouw het als normaal om Lessons Learned te delen met collega's.						
Ik vind het een slecht idee om Lessons Learned te delen met anderen.						
Mijn overige werk komt niet in de problemen als ik me richt op het delen van Lessons Learned met anderen.						
Ik vind het belangrijk om tijd vrij te maken om Lessons Learned te delen met anderen.						
Ik krijg graag een reactie van diegene met wie ik Lessons Learned heb gedeeld.						
Ik vind dat mijn Lessons Learned belangrijk zijn.						
Ik vind dat de Koninklijke Marine mij aanmoedigt om Lessons Learned te delen.						

25. De volgende stellingen hebben betrekking op het contact met collega's/ voorgangers

Toelichting (indien gewenst):

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26. De volgende stellingen hebben betrekking op de Lessons Learned die door middel van het operatieverslag de input vormen voor de database.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik zie het nut in van het aanleveren van Lessons Learned voor het operatieverslag.						
Ik vind het een slecht idee om Lessons Learned aan te leveren voor het operatieverslag.						
Ik voel me gestimuleerd om Lessons Learned aan te leveren voor het operatieverslag.						
Ik vind het belangrijk om Lessons Learned aan te leveren voor het operatieverslag.						
Ik beschouw het als normaal om Lessons Learned aan te leveren voor het operatieverslag.						
Ik vind dat Lessons Learned opgeslagen moeten worden in een database.						
Ik vind dat ik onvoldoende op de hoogte word gehouden van wat er met de Lessons Learned gebeurt.						
Ik vind het prettig om feedback te krijgen op de Lessons Learned die ik heb aangeleverd.						
Ik vind het belangrijk om tijd vrij te maken om Lessons Learned aan te leveren voor het operatieverslag.						
Ik krijg een positief gevoel door mijn Lessons Learned aan te leveren.						

Toelichting (indien gewenst):

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27. De volgende stellingen gaan over mogelijk gemiste Lessons Learned.

	Geheel mee oneens	Mee oneens	Neutraal	Mee eens	Geheel mee eens	n.v.t
Ik vind dat ik tijdens mijn missie essentiële zaken opnieuw heb moeten uitvinden.						
Ik denk dat het voorkomen had kunnen worden dat ik essentiële zaken opnieuw moest uitvinden.						
Ik vind dat ik Lessons Learned gemist heb tijdens mijn missie.						
Ik denk dat de Koninklijke Marine als organisatie leert van aangedragen Lessons Learned.						
Ik vind het moeilijk om Lessons Learned te vinden.						
Het is mij duidelijk bij wie ik kan aankloppen voor het verkrijgen van Lessons Learned.						

Toelichting:

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.....

.....

.....

De laatste twee vragen zijn open vragen en geven u de mogelijkheid om het een en ander toe te lichten, een opmerking te maken of om uw eigen ideeën te delen.

28. Wat zou er volgens u verbeterd kunnen worden in de manier waarop u Lessons Learned heeft ontvangen of de manier waarop Lessons Learned worden overgedragen?

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29. Voor eventuele aanvullingen en/of opmerkingen is hieronder ruimte beschikbaar.

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EINDE: bedankt voor het invullen van de vragenlijst!