

## **Glossary of Shortenings**

CS= Customer Shelves and Sales personnel

DC= Distribution Central (suppliers to the warehouses)

DDs= Delivery damages

Dep. X. = Department X, at the warehouse in Jönköping

Dep. Y= Department Y, at the warehouse in Linköping

E1= Employee 1, at Dep. X. Forklift operator (permanent). Worked for 17 years.

E2= Employee 2, at Dep. X. Forklift operator (paid by the hour). Worked for 5 years.

E3= Employee 3, at Dep. X. Forklift operator (paid by the hour). Worked for 4 months.

E4= Employee 4, at Dep. Y. Forklift operator (permanent). Worked for 28 years.

E5= Employee 5, at Dep. Y. Forklift operator (paid by the hour). Worked for 1,5 years.

E6= Employee 6, at Dep. Y. Forklift operator (paid by the hour). Worked for 4 months.

FL= Forklift operator

GM= Group manager

LM= Logistics manager

P= Picker personnel

PJ= Pallet Jack personnel

S= Sales personnel

WDs= Warehouse damages

# Table of Contents

<b>Acknowledgements .....</b>	<b>1</b>
<b>Abstract.....</b>	<b>2</b>
<b>Sammanfattning .....</b>	<b>3</b>
<b>Glossary of Shortenings .....</b>	<b>4</b>
<b>Figures .....</b>	<b>9</b>
<b>Tables .....</b>	<b>10</b>
<b>A Successful Global Furniture Company.....</b>	<b>11</b>
<b>1 Introduction.....</b>	<b>12</b>
1.1 A Mini Case of the Situation at Dep. X .....	12
1.2 Background .....	12
1.3 Research Approach: Case Study .....	13
1.3.1 Comparative Design .....	14
1.4 Disposition.....	14
<b>2 Pre-Study at Dep. X.....</b>	<b>16</b>
2.1 Findings of the Pre-Study .....	16
2.1.1 The Logistics Department.....	16
2.1.2 Pre-Study- Interview with Logistics Manager and Group Manager 16	
2.1.3 Dep. X at the Company .....	17
2.1.4 How Dep. X Should Operate .....	18
2.1.4.1 'Introduction Agenda'.....	18
2.1.4.2 'Checklist for New Employees'.....	19
2.1.4.3 'Task list' .....	20
2.1.4.4 5 Minute Morning Meeting .....	21
2.1.4.5 Departmental Meeting and Information E-mail .....	21
2.1.4.6 Information Notice Board.....	22
2.2 Cost Issue at Dep. X = Damaged Goods.....	22
2.3 Target Levels for WDs.....	24
2.4 Conclusion of Pre-study .....	25
<b>3 Problem .....</b>	<b>26</b>
3.1 Hypotheses .....	26
3.1.1 Flaws in Communicating Knowledge.....	26
3.1.2 Flaws in Working Environment .....	27
3.1.3 Flaws in Motivation .....	27
3.1.4 Flaws Concerning Customers .....	28
3.2 Research Questions .....	29
3.3 Normative Purpose.....	29
3.3.1 Practical and Theoretical Relevance .....	30
3.4 Limitations .....	30
3.4.1 Dep. X .....	30
3.4.2 DDs and WDs.....	30
3.4.3 Employee Perspective .....	30
3.4.4 Target Audience .....	30

<b>4 Methodological Aspects.....</b>	<b>31</b>
4.1 Scientific Approach, Method and Data .....	31
4.1.1 Hermeneutic Perspective- Interpretation .....	31
4.1.2 Positivist Perspective- Empirical Data From Investigation of Damage Levels and From Surveys .....	32
4.1.3 Data Collection; Secondary and Primary Data .....	32
4.2 Abductive Research Strategy .....	32
4.3 Validity, Reliability and Objectivity- Critics .....	33
4.3.1 Validity .....	33
4.3.2 Reliability .....	34
4.3.3 Objectivity .....	34
4.4 Ethical Considerations .....	34
4.5 Proceeding of the Research .....	35
4.5.1 Interviews with Logistics Manager, Group Manager and Employees .....	35
4.5.1.1 Selection of Questions.....	35
4.5.1.2 Selection of Respondents.....	36
4.5.1.3 Setting .....	38
4.5.1.4 Data Processing and Analysis .....	38
4.5.2 Surveys .....	39
4.5.2.1 Selection of Questions.....	39
4.5.2.2 Selection of Respondents.....	39
4.5.2.3 Setting .....	40
4.5.2.4 Data Processing and Analysis .....	40
4.5.3 Investigation of 5 Minute Meeting .....	40
4.5.3.1 Data Processing and Analysis .....	40
4.5.4 Investigation of Damage Levels .....	41
4.5.4.1 Setting .....	41
4.5.4.1.1 Dep. X Versus Dep. Y.....	41
4.5.4.2 Data Processing and Analysis .....	42
4.5.5 DD Reporting- Comparison of Dep. X and Dep. Y.....	42
4.5.5.1 Setting .....	42
4.5.5.2 Data Processing and Analysis .....	42
4.6 Shortcomings of and Reflections on the Research.....	42
4.6.1 Interviews .....	43
4.6.2 Surveys .....	44
4.6.3 5 Minute Meeting.....	44
4.6.4 Investigation of Damage Levels .....	44
4.6.5 DD Reporting- Comparison of Dep. X and Dep. Y.....	45
<b>5 Theoretical Framework.....</b>	<b>46</b>
5.1 Logistics .....	46
5.1.1 Costs of Poor Quality (COPQ).....	46
5.1.1.1 Prevention Costs.....	47
5.1.1.2 Appraisal Costs .....	47
5.1.1.3 Internal Failure Costs .....	47
5.1.1.4 External Failure Costs .....	47
5.1.2 Previous Studies in the Field of Logistics .....	48
5.2 The Power of Context- Broken Window Theory .....	48
5.3 Communication Theory .....	49
5.3.1 Process School and Semiotic School .....	50
5.3.1.1 Process School .....	50
5.3.1.1.1 Linear Model.....	50

5.4	Communication Within Organizations.....	51
5.4.1	Internal Communication; Formal and Informal.....	52
5.5	Motivation Theories .....	52
5.5.1	Vroom's Expectancy Theory.....	52
5.6	Summary of Theories .....	54
<b>6</b>	<b>Empirical Findings of the Research.....</b>	<b>55</b>
6.1	Interviews with Logistics Manager, Group Manager and Employees .....	55
6.1.1	Interviews with Managers .....	55
6.1.1.1	Flaws in Communicating Knowledge .....	55
6.1.1.1.1	Dep. X .....	56
6.1.1.1.2	Dep. Y .....	56
6.1.1.2	Flaws in Working Environment .....	57
6.1.1.2.1	Dep. X .....	57
6.1.1.2.2	Dep. Y .....	57
6.1.1.3	Flaws in Motivation.....	58
6.1.1.3.1	Dep. X .....	58
6.1.1.3.2	Dep. Y .....	58
6.1.1.4	Flaws Concerning Customers.....	58
6.1.1.4.1	Dep. X .....	59
6.1.1.4.2	Dep. Y .....	59
6.1.2	Interviews with Employees .....	59
6.1.2.1	Flaws in Communicating Knowledge .....	59
6.1.2.1.1	Dep. X .....	59
6.1.2.1.2	Dep. Y .....	59
6.1.2.2	Flaws in Working Environment .....	60
6.1.2.2.1	Dep. X .....	60
6.1.2.2.2	Dep. Y .....	60
6.1.2.3	Flaws in Motivation.....	60
6.1.2.3.1	Dep. X .....	60
6.1.2.3.2	Dep. Y .....	61
6.1.2.4	Flaws Concerning Customers.....	61
6.2	Survey .....	61
6.2.1	Flaws in Communicating Knowledge.....	61
6.2.1.1	Dep. X.....	61
6.2.1.2	Dep. Y.....	61
6.2.2	Flaws in Working Environment .....	62
6.2.2.1	Dep. X.....	62
6.2.2.2	Dep. Y.....	62
6.2.3	Flaws in Motivation .....	62
6.2.3.1	Dep. X.....	62
6.2.3.2	Dep. Y.....	62
6.2.4	Flaws Concerning Customers .....	62
6.3	Investigation of 5 Minute Meeting at 5 a.m. ....	62
6.4	Investigation of Damage Levels .....	63
6.4.1	Dep. X .....	63
6.4.1.1	General Observation of Warehouse X .....	63
6.4.1.2	Day 1 .....	63
6.4.1.3	Day 2 .....	64
6.4.2	Dep. Y .....	65
6.4.2.1	General Observation of Warehouse Y .....	65
6.4.2.2	Day 1 .....	65
6.4.3	Comparision Between CS and External Warehouse .....	66
6.5	DD Reporting- Comparison of Dep. X and Dep. Y.....	66

6.5.1	DD Reporting Procedures .....	66
6.5.1.1	Why Report? .....	66
6.5.2	Numbers of Reported DDs at Dep. X and Dep. Y.....	67
<b>7</b>	<b>Analysis; Reflection on Identified Problems.....</b>	<b>68</b>
7.1	Analysis of Pre- Study Findings.....	68
7.2	Comparison of Dep. X and Dep. Y; Interviews with Logistics Manager, Group Manager and Employees .....	68
7.2.1	Flaws in Communicating Knowledge.....	68
7.2.1.1	Shannon & Weaver's Communication Model .....	69
7.2.1.2	Internal Communication in Organizations.....	70
7.2.2	Flaws in Working Environment .....	70
7.2.3	Flaws in Motivation .....	71
7.2.4	Flaws Concerning Customers .....	71
7.3	Comparison of Dep. X and Dep. Y; Survey .....	72
7.3.1	Flaws in Communicating Knowledge.....	72
7.3.2	Flaws in Working Environment .....	73
7.3.3	Flaws in Motivation .....	74
7.3.4	Flaws Concerning Customers .....	74
7.4	Investigation of 5 Minute Meeting at 5 a.m. ....	74
7.4.1	Flaws in Communicating Knowledge.....	74
7.4.2	Flaws in Work Environment.....	74
7.4.3	Flaws in Motivation .....	75
7.4.4	Flaws Concerning Customers .....	75
7.5	Investigation of Damage Levels .....	75
7.5.1	Flaws in Communicating Knowledge.....	75
7.5.2	Flaws in Working Environment .....	75
7.5.3	Flaws in Motivation .....	76
7.5.4	Flaws Concerning Customers .....	76
7.6	DD Reporting- Comparison of Dep. X and Dep. Y.....	77
7.7	Summary of Analysis.....	77
<b>8</b>	<b>Conclusion.....</b>	<b>78</b>
8.1	Conclusion of the Problem Areas .....	78
8.1.1	Flaws in Communicating Knowledge.....	78
8.1.2	Flaws in Working Environment .....	78
8.1.3	Flaws in Motivation .....	78
8.1.4	Flaws Concerning Customers .....	79
8.2	Suggestions for Improvements .....	79
8.2.1	Flaws in Communicating Knowledge.....	79
8.2.2	Information .....	80
8.2.3	Flaws in Working Environment .....	81
8.2.4	Frequently Damaged Goods .....	81
8.2.5	Operation Clean the Warehouse .....	81
8.2.5.1	STAGE 1; Cleaning Up.....	81
8.2.5.2	STAGE 2; Stabilization .....	81
8.2.5.3	STAGE 3; Improvement .....	82
8.3	Generalizations of Findings .....	83
	<b>References .....</b>	<b>84</b>
	Books	84
	Articles	84

<b>Appendices .....</b>	<b>86</b>
Appendix 1 Pre-Study Interview with Logistics Manager; Questions and Answers .....	87
Appendix 2 Pre-Study Interview with Group Manager; Questions and Answers .....	89
Appendix 3 Interview with Logistics Manager at Dep. X; Questions and Answers .....	91
Appendix 4 Interview with Group Manager at Dep. X; Questions and Answers .....	94
Appendix 5 Interview with Group Manager at Dep. Y; Questions and Answers .....	100
Appendix 6 Interviews with Employees at Dep. X; Questions and Answers .....	103
Appendix 7 Interviews with Employees at Dep. Y; Questions and Answers .....	107
Appendix 8 Questions and Answers to Survey at Dep. X .....	110
Appendix 9 Questions and Answers to Survey at Dep. Y .....	115
Appendix 10 Investigation of Damage Levels at Dep. X; Results.....	120
Appendix 11 Investigation of Damage Levels at Dep. Y; Results.....	125
Appendix 12 DD Reporting - Comparison of Dep. X and Dep. Y .....	127

## Figures

Figure 1 Early Stage Model of the Problems at Dep. X	11
Figure 2 Research Method; Case Study.	12
Figure 3 Introduction Agenda at Dep. X.	18
Figure 4 Checklist for New Employees at Dep. X.	19
Figure 5 Task List for Employees at Dep. X.	20
Figure 6 Delivery Damages (DDs) and Warehouse Damages (WDs). (Own Figure.)	21
Figure 7 Indirect Damage Inflicted by Customer. (Own Figure.)	22
Figure 8 Damage Report Form.	23
Figure 9 DDs and WDs Result in Costs. (Own Figure.)	25
Figure 10 Pre-Study Model of the Problems at Dep. X	27
Figure 11 Mapping of Issues at Dep. X, Made in Order to Construct Interview Questions.	35
Figure 12 Schematic Structure of the Respondents' Relation to One Another. (Own Figure.)	37
Figure 13 Communication; Transmitter and Receiver. (Own Figure, Derived From Fiske (1997).)	50
Figure 14 Expectancy Theory. (Own figure, Derived From Vroom (1964).)	52

Figure 15 The Communication Issue at Dep. X.	69
Figure 16 An Example of how Increased Valence Might Increase the Total Motivational Force.	70
Figure 17 Analysis Model of the Problems at Dep. X.	76
Figure 18 The Reasons for The High Level of WDs and DDs in Dep. X.	78
Figure 19 Improvements at Dep. X Which Will Result in WDs and DDs Decreasing.	82

## Tables

Table 1 Accumulated WDs at Dep X; Product Codes Which does not Meet Targets.	23
Table 2 The Respondents in the Conducted Interviews.	35-36
Table 3 COPQ. (Own Figure, Derived from Cost of Poor Quality, 2008.)	47
Table 4 Damage Levels at Dep. X, Day 1. (Own Table.)	63
Table 5 Damage Levels at Dep. X, Day 2. (Own Table.)	64
Table 6 Damage Levels at Dep. Y, Day 1. (Own Table.)	64
Table 7 DD Reports From Dep. X and Dep. Y. (Own Table.)	66

## **A Successful Global Furniture Company**

For the reader to feel comfortable with the thesis topic, the authors will first describe the thesis company's operations, and more closely the department the authors chose to study. However, the authors are not allowed to mention the name of the company due to secrecy reasons and the company's aim to stay competitive. Therefore, no references will be mentioned in the sections dealing with the company.

The thesis company is a global furniture company, with its roots in Sweden, six decades ago. It successfully operates in 40 countries all over the world and this number increases each year. The annual turnover amounts to more than 211 billion SEK, and being very competitive and highly profitable, the company is socially involved worldwide and takes great environmental responsibility meanwhile.

The product line covers almost everything that is needed in households, offices and warehouses. A visit to one of their warehouses is enough to furnish most places where humans reside. Daily, approximately 4000 visitors come to the warehouse where this case study was conducted. The company's vision is high quality merchandise with low prices, so that everyone can afford their products. It becomes evident for the reader that a cost focus is at the heart of the company's operations in order to sustain this vision.



# 1 Introduction

---

*This thesis is introduced with a section explaining the context in which it came into existence, and the focus of the research. The case study methodology is explained and the disposition of the paper is briefly elaborated on.*

---

## 1.1 A Mini Case of the Situation at Dep. X

While the whole city is still sound asleep, a few brave warehouse workers dare to defy their biological clock and venture out in the morning dew to once again do a hard day's work. Klas, the new guy, almost does not make it to work, since his car did not start at first. And there are no buses going to his workplace at 4.30 in the morning. Stressed out, he miraculously makes it on time. Lasse had a fight with his wife the night before, and hardly even got 3 hours of sleep. Yesterday afternoon, John was asked to work this morning because Thomas had called in sick after putting up some shelves yesterday and hurt his thumb really bad. John sighs at the thought of the day lying ahead of him, since he does not even remember how you were supposed to report damages.

With drowsy eyes, the workers embark on the dismal journey to the logistics department at the big warehouse. After a quick cup of coffee and a five-minute stressful briefing about today's tremendous workload of 320 cubic meters, they drag themselves up on the forklifts. Then, Lars runs in, excusing himself for being late. He missed the morning meeting, but how important could it be? Besides the 320 cubic meters of incoming freight, the group manager hands the guys five task- lists each. This could only mean one thing; it is going to be a hell of a day. Deadline- when customers come and all work is expected to be done- is in five hours. Chaos, panic and remorse spread through the department. Lasse accidentally runs the forklift into a pallet full of wardrobes, so he leans over the vehicle to check if the damage is great. Only the package, he guesses, and puts the pallet in its place. As if this was not enough, due to the extreme workload, the employees have not got the necessary time to check incoming goods for damages. They are not fully aware of the large cost this implies for the department. And no one cares about cleaning up the gates. This can wait till later, they suppose.

## 1.2 Background

In a world of increased competitiveness due to globalization and peak performance, companies must struggle to stay in business. Cutting costs in all aspects of the business is a vital endeavor. The venture of spotting and eliminating costs will only increase in importance.

Furthermore, not only the ones working in the controlling department of companies are affected by costs and deal with them. All stakeholders of a company are affected by costs directly or indirectly. Nowadays, management is keen to make it a matter of all workers, down to the floor of the firm, to cut costs or at least be aware of them.

Therefore, the authors have pinpointed a cost issue in a global furniture company. Specifically, this paper will concern not a cost that is directly linked to the operations of the company and thus mandatory, but such a cost that could in utopia be eliminated totally, and is thus avoidable. It is the cost of damaged freight and products, which today amounts to tremendous sums. To narrow down, the authors have studied one department, in this company, that is struggling with proportionally unacceptable cost levels. Compared to oth-

er similar departments in the furniture chain, this department carries notably larger costs. From now on, this department will be named Dep. X.

The warehouse chain has a very clear cost focus in all matters. An example of this is that the company recently held a lecture for their employees, the subject being how the current global financial crisis affects the company at large and the individual worker. Hence, the company is keen to eliminate this avoidable cost of damaged freight as soon as possible.

The authors [synonymous to ‘researchers’ in this thesis] are specifically interested in cost related issues, since it is at the heart of their educational branch. Hartvigson is interested in profitability analyses and more particularly cutting costs in order to increase profits. Palmén has worked at one of the warehouse’s suppliers before and will later on specialize in cost management and incentive control in the subject area. Cilingiroglu will be working in the field of accounting management after graduation. Moreover, Cilingiroglu actually works at Dep. X. In his daily work, he experiences the cost problem and is concerned that a lot of money is lost here, when it could be used for better purposes. Through him, the co-authors were enlightened about the problem. The management confirmed that they were troubled about it, but were yet to identify the underlying reason. At this point, the authors saw the possibility to analyze the problem and be helpful in providing potential solutions. As the authors have connections to the department as well as the industry, they believe they will be able to focus on key factors and ask relevant questions.

The first reflections that the authors made regarding what could be the source of the problems was that it was related either to motivational issues or a too high turnover among the personnel, as illustrated by figure 1 below. However, to get a better understanding and a broader view, a pre-study was conducted at Dep. X. Both the logistics manager and the group manager were interviewed and the result of the pre-study is presented in section two.

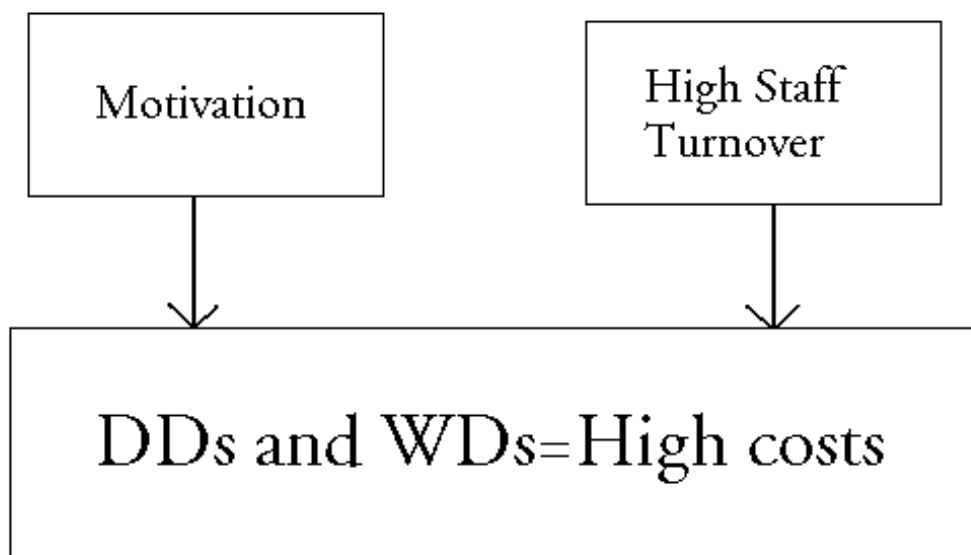


Figure 1. Early Stage Model of the Problems at Dep. X

### 1.3 Research Approach: Case Study

To solve the problem at Dep. X, the authors have chosen to conduct a case study. The methodological aspects concerning this will be explained now, while a more detailed review of

the method in large will be dealt with in section four. Byrman (2002) characterizes the case study as studying in depth a certain case or situation. It is important to point out that the purpose of a case study is not to find general patterns, but to study a specific type of cases or a single case alone. In the thesis case, the researchers chose to use both qualitative and quantitative methods and even though many of the pleaders for case studies often choose qualitative methods, a mixture of the two is not uncommon. The researchers chose to collect and analyze data continuously. They started off by conducting a pre-study, and then analyzed the material in order to identify and close in on the problem. More data was then collected and analyzed in several steps until the authors found they had enough information to make a conclusion. This method is illustrated in figure 2 below.

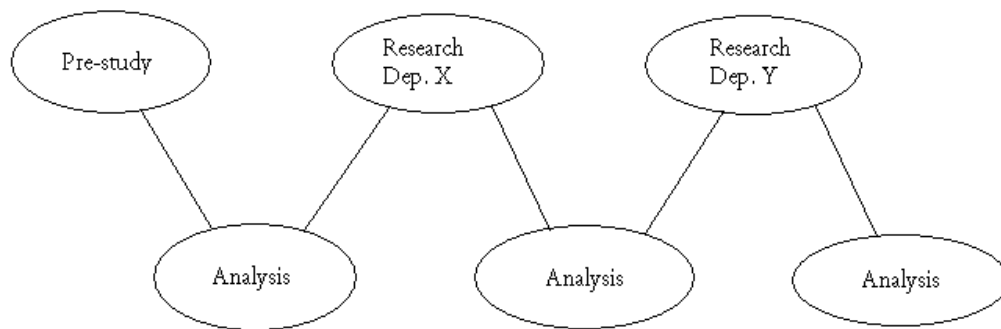


Figure 2 Research Method; Case Study.

### 1.3.1 Comparative Design

To locate the source of the problems, the authors chose to benchmark Dep. X against another department; Dep. Y. This is called a comparative approach. To the greatest possible extent, the same data collections will be conducted at both departments and then a comparison will be made between them. Dep. Y was chosen because of the fact that it is basically the same size and within a reasonable geographical area. Apart from this, Dep. Y also carries significantly lower costs of damaged products, meeting the expectations set by the central organization.

## 1.4 Disposition

Section 1 has dealt with an introduction of the thesis topic and basic methodology, and has informed the reader about the global furniture company Dep. X belongs to.

Section 2 will account for how the pre-study of the research was performed, as well as the findings of it. It will describe the operations of Dep. X and elaborate on the cost problem.

Section 3 will contain a problem discussion, and hypotheses, concerning the cost problem, that will be of importance in suggesting a viable solution to Dep. X. Also, this section will state the purpose, and limitations, of the research.

Section 4 will report on methodological aspects, the proceeding of the research and shortcomings. The scientific perspective will be explained thoroughly. Also, validity and reliability issues will be dealt with.

Section 5 includes the theoretical framework for the study.

Section 6 will contain the findings of the research. The data from the survey as well as interviews and answers, in full text, will be found in the appendices. The data will be processed; described and commented on, in this section.

Section 7 is an analysis of the cost problem connected to the operations of Dep. X, justifying the chosen theories and how conclusions have been drawn.

Section 8 concludes the authors' work.

References and appendices finish the thesis.

## 2 Pre-Study at Dep. X

---

*In order for the authors to obtain a clearer view of the circumstances at Dep. X and the problem at hand, as well as for the reader to be informed about this, a comprehensive pre-study was conducted at Dep. X. The findings of that study are the context of this section.*

---

After the authors had made the decision to do their research on Dep. X and the cost problem there, they realized the need for broad inside information on the operations of the department. This was to get a clearer view of the department and where the cost problem may lie and to see whether or not the original reflections the authors had made were correct. The pre-study consisted of one interview with the logistics manager at Dep. X, and one interview with the group manager at Dep. X. Also, the researchers browsed the corporate website to find more information about the company.

### 2.1 Findings of the Pre-Study

The findings of the pre-study interviews are the tasks of the logistics department, the tasks of individual employees at Dep. X, and some important aspects in the operations of Dep. X. Also, an elaboration on the cost issue at Dep. X is presented. The remaining part of section 2 presents these findings.

#### 2.1.1 The Logistics Department

Since the thesis company operates worldwide and carries such a large product range, it has a large logistics branch, which is responsible for handling the distribution of products all the way from contractors to warehouses. Within each warehouse, there is also an internal logistics department, which is responsible for unloading and organizing the products as they arrive at the warehouse. The goods must flow from the trucks into the shelves of the warehouse, so customers can buy them. In between these stages of movement of goods, freight must be examined and supplemented, registered, sorted and separated, and sent to the right place in the warehouse; shop, customer shelf or storage area.

Every day, thousands of products are handled at the logistics department, and the employees there must struggle to be as efficient as possible so that all products a customer may demand are available at all times. Goods are packaged in flat parcels, transported by train, ship and trucks to be as cost-effective as possible. To be able to handle the logistical work task well, the employees must know all the activities going on in the warehouse and the locations of all products. Having full control of the warehouse and finding solutions to the logistics problems that may appear is a huge duty.

It is the responsibility of all employees working at the logistics department to examine goods for damages, and to handle freight efficiently. But it is the explicit responsibility of the logistics managers to make sure routines and methods are in place for handling so that logistics costs are held low. The group manager and the logistics manager are the ones carrying this joint responsibility.

#### 2.1.2 Pre-Study- Interview with Logistics Manager and Group Manager

Below follows a selection of the questions and answers from the pre-study that the authors found to be relevant. The questions and answers can be found in their full length in appendices 1 and 2. The answers from the logistics manager are from an interview conducted

2008-09-25 and the answers from the group manager are from an interview conducted 2008-10-02.

### **How does the introduction for new employees work?**

“The introduction information is of higher quality when we do not have peak deliveries; when there is not too much work coming in” said the logistic manager. While the group manager’s answer was “It works well. We have a check list and introduction agenda for new employees”. Both agreed on that the new employees should ask questions more frequently.

### **How do you inform your employees?**

Both respondents answered the question almost identically and mentioned the same information sources when informing the employees. “Through 5 min meetings, staff meetings, e- mail concerning departmental meetings, a notice board, and the department magazine” both said.

### **What kind of cost problems do you have at the logistics department?**

The logistics manager said: “Our main problem areas are DD and WD costs”.

The group manager mentions other logistics departments: “We have been compared to other logistics department in other warehouses, and we have larger damage costs on DDs and WDs than they have”. He continues:” Mainly, the latter one is a problem, since they are unsellable products. Even since we built the external warehouse, these numbers remain high.” The group manager also tells the researchers about a group called ‘Cost hunters’, which works with detecting sources of these costs.

### **What are DD and WD?**

The logistics manager explains DDs: “DDs stands for delivery damages; damaged freight in the deliveries. Those become a logistics cost when we miss to report them, but if we report them, no money is lost for the warehouse”. He carries on: “If we have received a damaged product and notice that it is broken, we have the possibility to take a picture of it and report it as a DD, if this is done before the pallet leaves the quay”. Explaining WDs, he says: “WDs stands for warehouse damages, and are damages that the employees cause in the transporting and filling up of products, and this is a big problem for the logistics department, since the warehouse carries the cost”. He also adds that this is a big problem in terms of money and a big problem in relation to the customers, because of the sight of the damaged products around the warehouse. He says: “this does not look good; it gives bad publicity for the brand”. What is more, he says that they have to become better in both areas.

The group manager does not agree with the last mentioned above: “Mostly, we are very good at spotting DDs” he says. He persists; “WDs are warehouse damages, caused by customers or by employees due to lack of space, and this a big problem for the logistics department”.

## **2.1.3 Dep. X at the Company**

It is not in the scope of this thesis to be concerned neither with the entire furniture company, nor its logistics departments in general. The focus of the problem discussion will be logistics Dep. X in one of its warehouses. Also, a benchmarking study will be performed, contrasting Dep. X with the comparable logistics Dep. Y in another warehouse.

Dep. X operates actively every morning between 5 am and 10 am, unloading and filling up products before customers arrive. About 10-14 employees carry out these tasks each morning. The manpower varies depending on the workload, illness and other unpredictable factors. Some employees operate forklifts [FL], while others use pallet jacks [PJ] to the areas the forklifts cannot access, to move goods. The fork lift operators are not only to unload trucks, but also finish off task lists they receive each morning. The task lists contain orders about which products that are out, and thus need to be refilled to where, and from what place they should be picked up.

While some employees unload trucks and label freight, others fill up shelves and unpack goods. It is however the assignment of all employees to check freight for damages and report them, as well as removing damaged products from shelves and keeping the warehouse neat. There are also employees starting work at 9 am, who work at the customer shelves [CS] department during opening hours. These employees also hold a responsibility in reporting damages. Moreover, the pickers [P] also hold a responsibility in removing damaged goods.

#### **2.1.4 How Dep. X Should Operate**

For the logistics department to work efficiently, some important aspects that are vital to its operations will be discussed in the following section.

##### **2.1.4.1 'Introduction Agenda'**

The company has a formal 'Introduction Agenda' for all new employees at its logistics departments. It consists of a 4-day program covering all security issues, garbage sorting, and rules and routines for all tasks at the department. This introduction program is translated into English and presented in figure 3 below.

Name: \_\_\_\_\_

- Day 1 date...
  - ✓ Review of the checklist for new employees
  - ✓ Review of the local forklifts rules
  - ✓ Safety round
  - ✓ Reporting incidents and forklift accident report
  - ✓ Handling of waste
  - ✓ Comprehensive review of the warehouse routines
  - ✓ Comprehensive review of the external storage
- Day 2 date...
  - ✓ Work with unloading incoming freight at the warehouse with co- worker
  - ✓ Simplified review of how to work at the store area
  - ✓ Work with co- worker at the external storage
- Day 3 date...
  - ❖ Before 10 o'clock
    - ✓ Work in the stream
    - ✓ Work with co- worker at the CS Area
    - ✓ Simplified review of routines at the CS Area
  - ❖ After 10 o'clock
    - ✓ Basic theory of the internal network system
    - ✓ Review of the CS area routines in the network
    - ✓ Review of the CS furniture routines
- Day 4 date...
  - ✓ Review of the store area routines
  - ✓ Work in the store area with co- worker

Figure 3 Introduction Agenda at Dep. X.

#### 2.1.4.2 'Checklist for New Employees'

Also, one of the things on the introduction program is a run through of the 'Checklist for New Employees' translated into English and presented in figure 4 below. The introduction program contains a work description, handing out of clothes and materials, authorization matters and local security affairs. Also, this checklist contains an item saying that new employees are to be informed about delivery damages and warehouse damages.



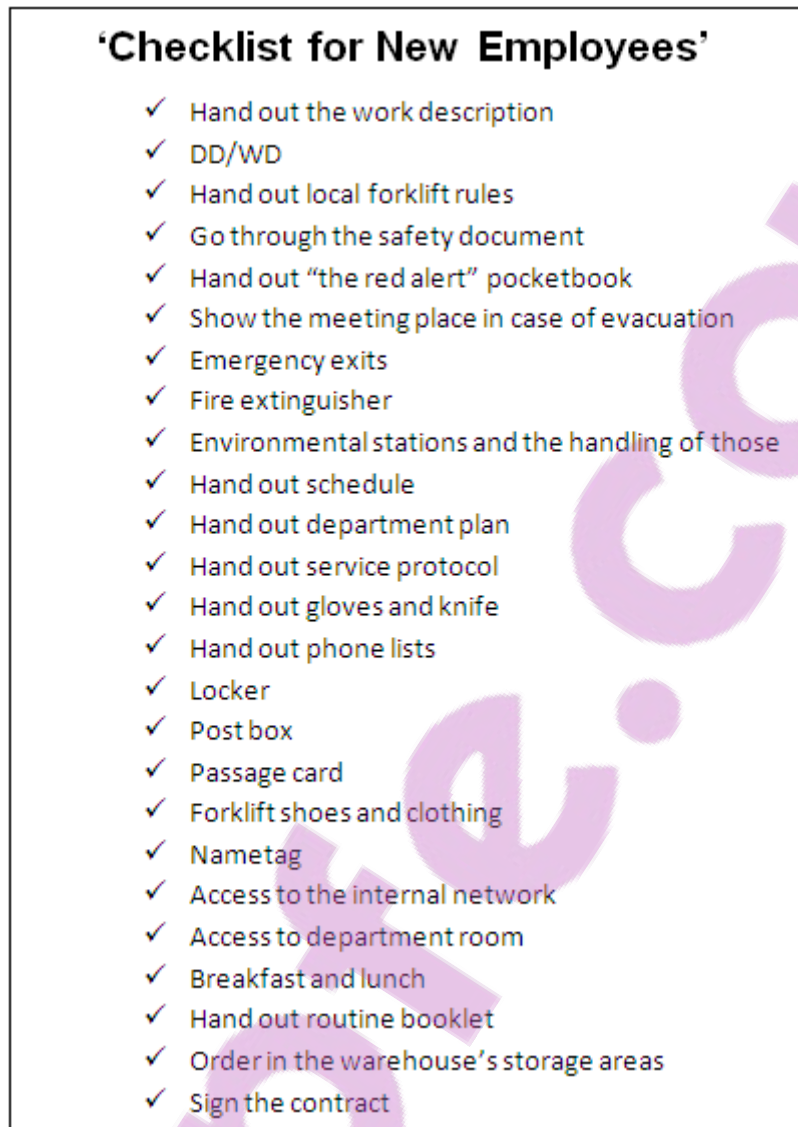


Figure 4 Checklist for New Employees at Dep. X.

#### 2.1.4.3 'Task list'

All employees at the logistics departments are also given a 'Task List', which can be found translated into English in figure 5 below. This thoroughly spells out which responsibilities they are held accountable for. Some important paragraphs are about ensuring the right quantity of the right quality is filled up, unloading and filling up effectively and in a safe manner, and cleaning up.

<p><b>Report to:</b> group manager/department manager</p> <p><b>The job description is</b></p> <p>to strengthen "the warehouse's" position as Sweden's leading home decoration company through</p> <ul style="list-style-type: none"> <li>➤ Correctly, efficiently and safely handle the flow of goods from arrival to selling area.</li> </ul> <p><b>The primary work tasks are to:</b></p> <ul style="list-style-type: none"> <li>➤ Guarantee that the actual quantity and quality is being refilled when necessary</li> <li>➤ Unload delivery in an efficient and safe way</li> <li>➤ Reload delivery in an efficient and safe way</li> <li>➤ Follow the logistic stream in a safe manner</li> <li>➤ Store goods in a safe way in the stated place</li> <li>➤ Perform inventory checks and immediately report deviations</li> <li>➤ Transport wrapping to nearest environmental station</li> <li>➤ Clean up your mess and help keeping the warehouse in a clean condition</li> <li>➤ Contribute and take part in the department's development</li> <li>➤ Remove dangerous objects to achieve a safe and secure setting for ourselves and our customers</li> <li>➤ Share your knowledge and experience with your colleagues</li> <li>➤ Carry the responsibility for one's own development, both socially and behaviorally and keep on learning each day</li> </ul>
--

Figure 5 Task List for Employees at Dep. X.

#### 2.1.4.4 5 Minute Morning Meeting

Dep. X has a 5 am morning meeting before work, to brief the employees on the amount of freight that has arrived in the dawn, and the tasks of the individual workers during the morning. This meeting also has a motivational aspect. The group manager holding the meeting tells the employees that they have to work hard.

#### 2.1.4.5 Departmental Meeting and Information E-mail

Every two weeks, the logistics department holds a departmental meeting. All forklift operators are invited to take part of the agenda. For those employees working the current day, this is salaried time, while those who drop in only for the meeting do not get paid. The ones who have been present are expected to inform those who missed the meeting about the agenda. During the meeting, contemporary problems or highlights are discussed. If something new is about to happen at the warehouse, this is elaborated on. Also, it is discussed how effective the handling of goods is. The main goal of this meeting is to address how the department can work more efficiently, and to give active feedback to the employees.

After this meeting has been held, the group manager sends an e-mail to each and every FL employee at the logistics department. This is a chance for those who did not attend to catch up on what was said, as well as for those who were present to update their memory

on it. The employees are then supposed to read the e-mail and reply 'Ok' to the group manager so he knows the employees have read it.

#### 2.1.4.6 Information Notice Board

The information notice board hangs at the location where the 5 minute morning meeting takes place. At this place, all information that has been sent out to the employees by e-mail and been brought up in the meeting, is put up, so they can take part of it during their working hours.

## 2.2 Cost Issue at Dep. X = Damaged Goods

The main problem, as found out in the pre-study, lies in that Dep. X carries significantly larger costs than comparable departments, but the reason is unclear. Numbers show that more freight is damaged at this department but no one has detected the underlying reasons. Continuous work, targeted at decreasing these costs, is done. For instance, the warehouse has built an external storage area to redistribute goods in a more efficient and practical manner. Also, the warehouse has formed a group called 'Cost hunters', whose mission is to detect damage costs and their origin. Employees have been informed that the cost of damaged goods has to be decreased. However, the department does not really know where to focus its efforts. Finding out this will be the objective of this thesis.

Before the authors can continue to elaborate on the phrases 'damaged goods' or 'damaged products', they have to define what a damaged good is from the perspective of the warehouse and more importantly in the eyes of the customer. A damaged good is when a product cannot be sold. The actual product may be broken, but does not even have to be damaged. It is enough that just the package is broken or smashed, since a customer will be unwilling to buy it.

At the department, which will from now on be called Dep. X, there are two main kinds of damages, and hence two kinds of associated costs (see figure 6).

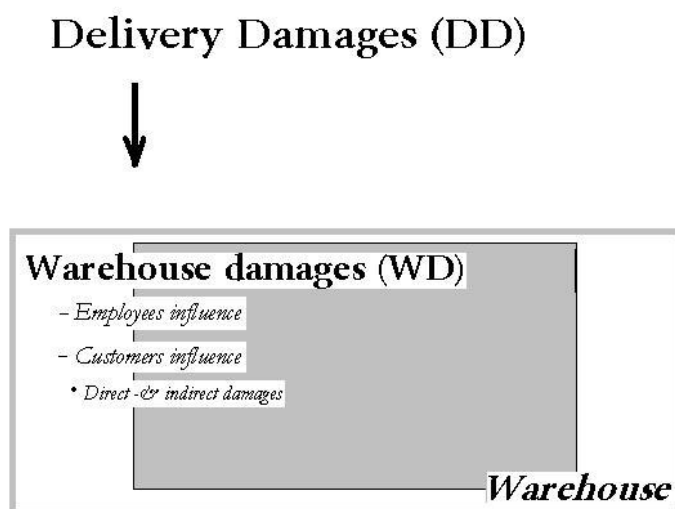


Figure 6 Delivery Damages (DDs) and Warehouse Damages (WDs). (Own Figure.)

These two kinds of damages, as presented in figure 6, are:

- Delivery damages, from now on termed DDs. These are damages on incoming freight to Dep. X from the company's other storage areas. DDs occur mostly when the truck is being loaded with the goods that are going to be delivered to the warehouse, due to that the supplier wishes to fill up the truck as far as possible. DDs also occur during transportation, when goods have been piled in the wrong way. The poorly piled goods fall over in the truck so they get smashed and damaged. If detected and reported before the freight has been unloaded, Dep. X gets back the total sum of the damage cost, and thus this cost is carried by the storage area that sent the shipment. If the damage is not detected and reported however, this becomes a cost carried by Dep. X, called warehouse damage.
- Warehouse damages, from now on termed WDs. These happen at Dep. X, and may be the result of the employees' carelessness or accidents, when employees break goods intentionally or unintentionally. For instance when they hit the product with the forklift or when they drop it on the floor from some height. In addition, WDs occur when the employees fail to spot DDs, because undetected DDs automatically become WDs. A WD may also be inflicted by customers. These can be divided into two subtypes; direct and indirect damages. The direct damages are the ones that appear when a customer deliberately breaks the package of the product, for instance to see how the material feels, and takes a new one. The indirect damage occurs when the customers shuffles over a damaged good on another product so the customer can reach a flawless one underneath or behind the damaged one, but, in doing that, the customer damages a second product without intending to. Figure 7 presents this situation. The grey areas are shelves, the beige ones are pallets, green areas are products and black spots are damages. In picture (1), a damaged product lies on the pallet to the left. A customer is going to buy such a product, but does not want the damaged one, so she pushes over the damaged product on the pallet to the right. In doing so, she simultaneously damages the product at the top of this pallet as she hits it with the originally damaged product.

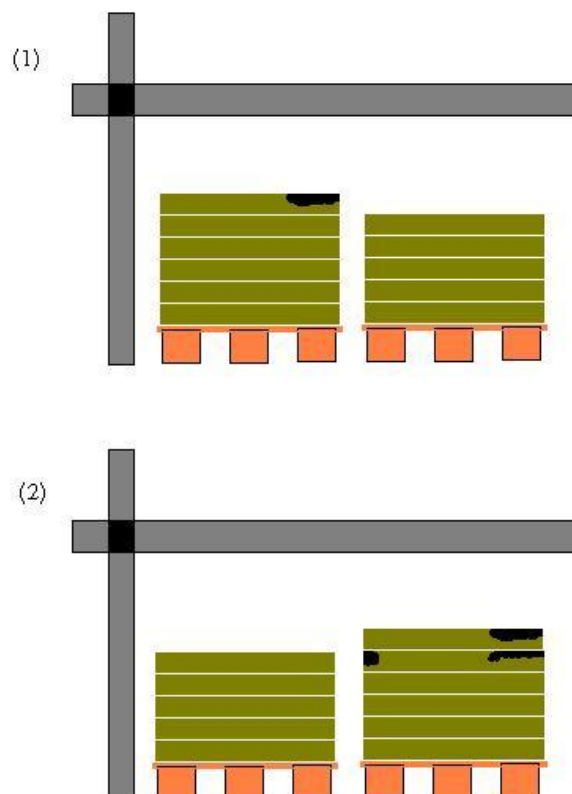


Figure 7 Indirect Damage Inflicted by Customer. (Own Figure.)

From this, one realizes that the cost issue lies in WDs, as they incur the greatest costs in Dep. X's financial statements. This is so because any detected DDs will never become a red figure for Dep. X.

## 2.3 Target Levels for WDs

Each warehouse in the chain has a weekly target of not exceeding an accumulative WD level of 0.3 % of their total products. This target is centrally imposed. The reporting of WDs (and DDs as well) is done on a 'damage report form', presented in Figure 8 below. In this form, one fills in the product code, delivery code (if it is a DD), number of items and product name of the damaged product. One signs it and takes pictures of the damage and then hands the report to the superior at the department, most often the group manager. Then, these reports are compiled into a weekly report of WDs, which is put up on a notice board in the personnel entrance.

Damage report form

DELIVERY DAMAGES					WEEK
Item	Quantity	Serial number	Product name	picture	signature
article					

WAREHOUSE DAMAGES			WEEK
Item article	Quantity	Product name	signature

Figure 8 Damage Report Form.

The weekly report separates the WDs into product codes, for instance 'bedroom', 'kitchen' and 'carpet'. It contains the weekly statistics as well as a column accounting for the accumulated damage level over one year (for instance September 2007- September 2008).

Studying this report for accumulated WD levels, one immediately notes that Warehouse X does not meet the 0.3 % goal; its accumulative damage level being in the range 0.1 - 1.3% depending on what product code one is interested in. There are 13 different product codes, and Warehouse X meets the accumulated goal for 8 of these product codes. What is interesting is that for the remaining 5 product codes, the numbers far extend the target level, as presented in table 1 below.

Product code	WD level, Week 25	Accumulated WD level
'living room storage'	1.0	1.2

'bedroom'	0.6	0.9
'office'	1.2	0.6
'plants, pots and supplies'	1.4	0.6
'extras'	0.1	1.0
Total	0.4	0.5

Table 1 Accumulated WDs at Dep. X; Product Codes Which does not Meet Targets.

The company's year starts in September, and the numbers are taken from June 2008, which means they mirror most of last year.

The total accumulated WD for the entire warehouse is 0.5, which is still above the 0.3 goal. The measurement of accumulated WDs 0,3 is a measurement for all the company's products, which means that they are expected to sell 99,7% of their entire stock.

It must be noted, however, that the figures of damage levels only represent those damages that have been reported. This does not mean the actual damage level is consistent with what is reported. If no one reports existing damages one week, the department reaches the target. But then, they would eventually have to report those damages. The damages would therefore hit the proceeding week's damage levels, making those higher.

The authors found a pattern in the report; mostly large and heavy things such as wardrobes and tables were damaged.

## 2.4 Conclusion of Pre-study

After having conducted the interviews with the logistics manager and the group manager, the authors started analyzing the data in order to form their own opinion about the various reasons to why Dep. X is facing higher WDs than other comparable departments. Four different aspects were discussed and highlighted and these are presented in their full length in section 3.

- Flaws in communicating knowledge (presented in section 3.1.1)
- Flaws in working environment (presented in section 3.1.2)
- Flaws in motivation (presented in section 3.1.3)
- Flaws concerning customers (presented in section 3.1.4)

These four aspects are then, to the extent that is possible, linked to relevant theories. The theories are mentioned briefly in section 3 and explained in their full length in section 5.

### 3 Problem

---

*This section reports the problem discussion and hypotheses concerning the cost problem that will be of importance in suggesting a viable solution to Dep. X. Also, this section states the purpose and limitations of the research.*

---

The authors are interested in finding out why Dep. X carries significantly larger WD costs than comparable departments, and believe that this can be corrected if the reason is identified.

Through a case study approach, the authors investigated:

- if the department has a great deal of undetected DDs, and
- if employees at the department for some reason create a lot of WDs, and
- if customers carry much responsibility for the WDs, and
- if some other reason, such as lack of warehouse space may be the reason for the high frequency of WDs.

#### 3.1 Hypotheses

The assumption made in this research is that DDs and WDs lead to costs, as presented in figure 9.

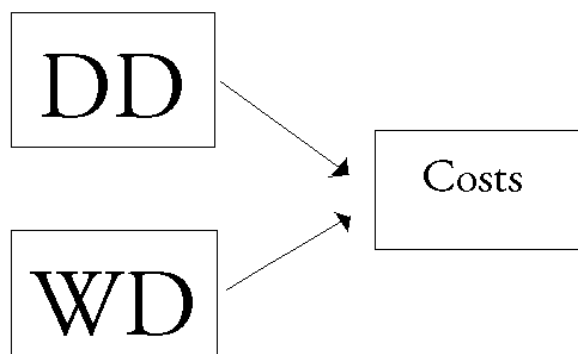


Figure 9 DDs and WDs Result in Costs. (Own Figure.)

The authors have some general hypotheses of what may be the reasons for the huge costs, and why the amount of DDs and WDs is so large.

##### 3.1.1 Flaws in Communicating Knowledge

- Employees do not know what DDs and WDs are.
- Employees are not aware of that not reporting a DD makes it a WD, and this is important to be aware of since the cost never appears until this stage for the department. Therefore, they do not understand the importance of reporting DDs.
- Employees do not know how to do the reporting or that it is supposed to be done at all.

- Employees believe that there exists some kind of insurance on damaged freight, so that there is no cost issue. This leads to moral hazard, which is an information-, as well as insurance- problem (Aktiesite.se, 2007). The theory goes that if one believes there exists some kind of insurance or protection against the consequences of one's actions, one will not take measures as to prevent them. This implies unnecessary use of resources, and would in this case imply that avoidable costs are incurred.

At Dep. X, employees get individual lists to cope with during their working day, and perhaps work is aimed too much at individualism, so that there is no climate for asking co-workers these things. Perhaps the introduction and morning briefing is not done carefully. To investigate these potential flaws concerning DDs that become WDs or WDs that isn't reported and removed from the store. Surveys as well as interviews will be conducted with employees at the department. Also, the authors will perform a benchmarking study by comparing figures for Dep. X with Dep. Y on how much DDs they report. If Dep. X carries out this task as desired; reporting all DDs, these numbers should be the same for both departments, as their freight comes from the same supplier.

This hypothesis led the authors to look further into communication theories and later on in section 5, Shannon & Weavers' communication model is presented, though an extended version that also contains the term feedback. Even though other areas and theories within communication are discussed, this will be the model the authors put most focus on. See section 5 for more information and an elaboration on theories to support the hypotheses and purpose.

### **3.1.2 Flaws in Working Environment**

- Employees do not have the time to report DDs.

To investigate if this may be the case, the surveys and interviews, as well as benchmarking study, will also be directed at finding out if the work load is too large. Workers may simply feel too stressed out by their basic work tasks, and not making time to taking care of damage reporting. Employees are working very independently with lists, so perhaps there is no collective responsibility in dealing with damage reporting.

- There is not enough space to carry out the work, so WDs become inevitable

One of the aspects Dep. X has so far been focusing on has been the issue of space. Shelves do not allow for much air between pallets and this may be a contributing reason to why WDs occur. This will be investigated through interviews, checking the attitudes among the employees and the group manager as well as benchmarked versus Dep. Y.

This hypothesis is some extent related to motivation theories, such as Vroom's expectancy theory, but also the broken window theory. Both these theories are explained in section 5.

### **3.1.3 Flaws in Motivation**

- Employees simply ignore reporting DDs.

This may be because many of the employees at Dep. X are newly employed or working there only temporarily or very little, so they do not feel a great deal of responsibility for this issue. In short, they do not know that it is one of their work tasks. When it comes to WDs found in the warehouse, it may also be the case that an employee ignores reporting a WD because no one else has. "Why should I do it when no one else has?" The surveys to some



extent, but especially the interviews, will be aimed at trying to figure out if this may be the reason.

To give their reasoning in this area a more scientific approach, the authors have used a theoretical model to connect their hypothesis to. Vroom's expectancy theory has been chosen for this purpose. The basic meaning of it is that there is a connection between what an employee expects from a job, and if he or she will feel motivated in conducting it. The model is thoroughly explained in section 5.

### 3.1.4 Flaws Concerning Customers

- Customers damage goods, thus resulting in WDs.

Since customers are in fact able to touch, move around and hence break things, the authors will ask the managers about their opinions, as well as make a general observation and comparison of the frequency of WDs at a department the customers have access to [customer shelves] and one in which only employees reside [external warehouse]. Also, one aspect of the research will be an investigation of the warehouse premises; to find out how much more damages there are after customers have been in the warehouse versus before customers enter the warehouse. This way, it will become clear if customers' actions have a large impact on the WDs.

No theory is directly connected to this hypothesis, however the broken window theory is used as a tool for improvements. The investigation of damage levels was conducted and, from that, the researchers came to a conclusion concerning this aspect.

At this early point, the authors believed that the problem was mostly related to flaws in communicating knowledge. This is illustrated by that this aspect is the largest box in figure 10. The design of the interviews and surveys thus focused more on this aspect than the other three.

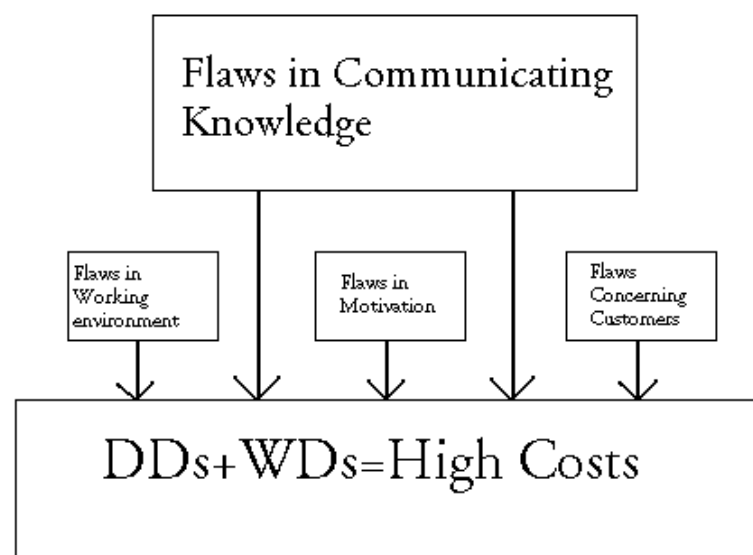


Figure 10. Pre-study Model of the Problems at Dep. X (Own Model).

## 3.2 Research Questions

The hypotheses, which were confirmed after the conclusion of the pre-study are developed into a couple of general research questions which was examined through surveys, interviews and an investigation of damage levels, as well as a benchmarking study against Dep. Y:

1. Are employees at Dep. X aware of how reporting of damages is made?
2. Are employees at Dep. X aware of the costs of DDs and WDs?
3. Is the communication between managers and employees sufficient?
4. Is the work load too large on employees to be able to report damages?
5. Is there a lack of space to carry out the work properly without suffering damages?
6. Are employees at Dep. X unmotivated to report damages?
7. Do customers have a large impact on damage levels?

The researchers initially intended to conduct merely surveys, but quickly realized this would not suffice, since an empirical investigation of the cost phenomenon in its context must be done. Therefore, multiple sources are required.

## 3.3 Normative Purpose

By investigating the factors mentioned in section 3.1 in depth at Dep. X, the authors will aim to reveal the now unknown reason for WDs, and develop a model to illustrate how to solve the problem. At this point, the authors believe a big part of the cost issue is communication flaws, as described above in figure 10. By this, the authors mean that the department seems to have failed in communicating the knowledge concerning damage reporting and damage costs to its employees. Therefore, the research will largely be aimed at investigating if bad communication of knowledge contributes to costs. Also, the researchers will examine if other factors may be part of the problem, such as space issues.

As there exists little knowledge about the problem today, this research will aim at getting a basic comprehension of, and explaining, damage costs as well as a deeper understanding of the reason behind it. A mix of an explanatory and an exploratory research approach will be performed. It will be found out **what** the reason is for the WDs and to some extent **why** this is so. The exploratory aspect will deal with explaining what is happening at Dep. X and gaining insights about the problem. The explanatory aspect will account for why Dep. X carries such large damage costs; establishing a causal relationship. Indeed, there must exist some organizational problem at Dep. X, since it is carrying these disproportionally large costs. If the authors would not be able to identify the problem, at least the factors in section 3.1.1 can be eliminated from the focus from there on.

The aim is for the outcome of this research to be practical advice for Dep. X. **The purpose of the thesis is to develop a model for Dep. X to aid in solving the problem of large damage costs.** Thus, the study will have a normative approach and act as **guidance**. The researchers will prescribe, and suggest, potential solutions so that the department will be able to focus its attention to this problem and thus cut costs.

### **3.3.1 Practical and Theoretical Relevance**

The cost issue at Dep. X is a large one and vital to deal with for the warehouse. This investigation will therefore be of great practical importance to Dep. X and certainly also to the other logistics departments at the company. Hopefully, it may also be useful for other departments or companies struggling with similar problems. The thesis will provide a method for dealing with such concerns and may act as guidance in how to evaluate the origin of a cost issue.

Theoretically, the outcome of this thesis is not clear to the authors at this stage. Since this research deals with such a specific problem, the outcome will probably not be generalizable, neither theoretically nor empirically. However, this does not mean the contribution will be insignificant. If the authors reveal the underlying problems for the cost issue in logistics Dep. X, this may be the daybreak of a new way to theorize about these matters.

## **3.4 Limitations**

### **3.4.1 Dep. X**

The authors will limit themselves to investigating one department, which struggles with the mentioned cost issue, namely Dep. X. Also, a benchmarking study will be done versus Dep. Y. Dep. Y has been chosen on the grounds that it is comparable in size and turnover and also a successful Swedish logistics department, concerning damage costs, within this furniture company.

### **3.4.2 DDs and WDs**

No other costs than DDs briefly and WDs extensively will be dealt with.

### **3.4.3 Employee Perspective**

Employees will be surveyed and interviewed and a group manager and logistics manager will be interviewed for this purpose. Indeed, they will probably hold differing opinions about the problem. Therefore, the authors wish to make clear that since the logistics work is mainly carried out by the employees, their perspective will be the dominant one in identifying the problem. However, the perspectives of the managers are as important, perhaps just because of the distinction between what they and the employees believe to be the problem.

Customers will not be dealt with at all, more than a study where the authors will investigate the magnitude of their impact on damages.

### **3.4.4 Target Audience**

Dep. X and its managers will gain from the findings of this thesis, as the reason for the cost issue will be detected. If efforts are focused at eliminating it, costs can be dramatically cut. Indirectly, other stakeholders will gain as well, such as employees and customers.

## 4 Methodological Aspects

---

*This section will account for what research strategy and methods that have been used in order to fulfill the purpose of this study. It concerns how data was collected, how samples were selected and a justification of these choices.*

---

The result of this applied research will be of immediate relevance to the managers at Dep. X, and will hopefully solve the problems the department is dealing with. To fulfill this purpose, the design of the methodology must be as follows.

### 4.1 Scientific Approach, Method and Data

Since the studied phenomenon is a specific cost problem and only potential reasons for the high damage costs have been proposed, the authors did not assume any solution to the problem before the study was conducted. A pre-study was performed to get the necessary pre-understanding to conduct the research. Also, as mentioned, one of the authors is employed at Dep. X, which gave more knowledge and insight. Each one of the hypotheses suggested in section 3.1.1 was examined in a case study of Dep. X, and the nature of the study must therefore be hermeneutic. The focus was to understand the dynamics within the single setting at Dep. X. Also, the approach was a mix of explorative, explanatory and at best normative, as explained in section 3.3 above. The authors strove for basic comprehension of the particular cost situation as well as deeper knowledge on its origin and hoped that this would act as guidance in solving the problem.

#### 4.1.1 Hermeneutic Perspective- Interpretation

The hermeneutic perspective is often used when studying complex matters where one cannot manipulate variables easily. Since the research subject of this thesis is a social setting and a cost problem, in order to fulfill the purpose, the researchers focused on **understanding and interpretation**. To investigate the complex setting and what factors may be the reasons for damage costs, the researchers needed to play an active role in the interviews, being very involved and interpret data in an experienced way, since it was difficult to distinguish between facts and understanding. The researchers allowed themselves to be subjective insiders and for instance considered body language and feelings in the interviews, and made the interviews flexible. The research method was designed so that the researchers came close to respondents and understood their work situation. Due to these reasons, the research outcome was mostly specific and did not allow for generalization. This was so because the specific situation at Dep. X cannot be reproducible; its complexity stems from its social actors- the employees.

There was no definite starting point for the research and the end point was known first when the research arrived at that point. The researchers did not know at an early stage why damage costs were high, so they needed to investigate some hypothetical factors. It may be the case that none of these factors is the true reason for the high damage costs at Dep. X, and hence, the research may be incomplete when it is finished. However, the researchers had a good pre-understanding of the subject through pre-studies, and a thorough comprehension of potential reasons for the damage costs. Still, the research was inevitably continuous work from theory, to reality, to facts, to theory, to reality and back to facts or a new theory. This is the method used when conducting a case study and is explained in section one. If the outcome is a new theory, the research outcome will be definitive and generalization can be made.

Most of the research resulted in qualitative data. It dealt with managers and employees and how they experienced their reality and acted in their work. Their attitudes and values were revealed. Therefore, interviews were chosen to collect data. However, a short survey, along with an investigation of damage levels, resulted in some quantitative data. Fieldwork in the form of interviews and surveys was performed for this goal to be accomplished, so that different parts of the context of the problem could be studied and interpreted to create a perceptible whole.

#### **4.1.2 Positivistic Perspective- Empirical Data From Investigation of Damage Levels and From Surveys**

Scientific investigations of quantities of damaged goods at different hours of the day were also made, and the outcome of this was empirical, quantitative data. Description and explanation is needless in this part of the study, since it is highly structured and the researchers are allowed to stay objective and external to what is studied. Data was measured mathematically, counting the occurrence of damages at different points of time during the day. After this investigation, the researchers tested one of the hypotheses and hopefully found some cause-effect relationship between customers and damages or employees and damages. This is called a positivistic approach.

#### **4.1.3 Data Collection; Secondary and Primary Data**

Secondary as well as primary data was collected for the researchers to perform this research. The secondary data consisted of literature, to broaden the researchers' knowledge but also information from the company such as documents. As the pre-study resulted in some general hypotheses, the authors collected books and academic articles on motivation, communication and logistics to form a theoretical framework and use this as a support in forming questions and so on for the interviews and surveys. To find the needed data the authors searched the university as well as city library, and databases such as Jstore, Julia, Emerald, Google scholar, and ABI/inform. Several keywords were used, such as logistics, motivation, communication, transport damage, transport cost, warehouse and many others. These English keywords were also translated into Swedish to return more hits.

Moreover, the corporate website of the company has been browsed for information. Also, some secondary data, like corporate documents, was collected from the group manager at Dep. X. Some statistical data on DD reports was collected from the group manager at the DC supplying Dep. X and Dep. Y.

The primary data was collected through an interview- based pre-study, surveys, interviews, an investigation of DD reporting and an investigation of damage levels at the warehouses. Also, a benchmarking study at Dep. Y was used to investigate if communication of knowledge is better there than at Dep. X. This benchmarking was also used to discover other factors that may be of importance. The purpose of the primary data was to find answers in investigating the specific phenomenon, and the construction of the research methodology was done in the manner most suitable for this purpose.

### **4.2 Abductive Research Strategy**

After having conducted the pre- study, the authors had developed some general hypotheses about the situation at Dep. X. Communication- and motivation- theories, which may aid in



understanding the problem, were examined more closely. However, at this point, it was unclear to what extent they would be helpful.

Sticking to either an inductive or deductive strategy was not possible at this stage. Instead, the researchers, subsequent to data collection, abducted the most likely reason for the large damage costs. **Abductive reasoning is justified since very little was known about the problem beforehand, and theories were merely used to support the exploratory process of the problem investigation.** The departure in this research was mainly the pre-study, supported and somewhat combined with existing theories within the communication and motivation field. Then, the researchers made empirical investigations, but the goal was to come up with own conclusions and an approach to reveal the problem at Dep. X, rather than testing theory. Thus, there is interface among induction and deduction, where theory and empirical findings have interacted throughout the research.

The research might, however, take an inductive turn if the findings result in the crafting of a novel theory about the cost problem at Dep. X. Another reader might, on the other hand, think that this research is deductive, in that the starting point is to some extent theoretical facts resulting in hypotheses and later data collection. However, the authors have used these theories mostly as support for the research process and to hypothesize, and the research does not have the deductive structure, but is in fact more flexible. There is no development of a clear theoretical position that was tested through data collection. The research is too specific and uniquely related to specifically Dep. X to predict outcomes, and is hence abductive.

## **4.3 Validity, Reliability and Objectivity- Critics**

### **4.3.1 Validity**

The internal validity issue in research concerns how well findings match reality. This research is very problem oriented, and thus the researchers believe they have been able to measure what they were supposed to. The pre-study focused the research and allowed for looking into certain communication and motivation theories, that aided in forming questions, but other aspects, such as space shortage were still also looked into. The researchers made a great effort in asking the right questions, allowing them to be open-ended and the interviews flexible, so the respondent was not trapped in answering a certain way. Also, the researchers were able to explain questions and let the respondents elaborate freely, to ensure the vital aspects of the problem at Dep. X were covered. The choice of respondents has been evaluated to ensure the findings are broad, taking into account the warehouse at large and Dep. X in depth.

External validity concerns whether findings can be generalized to other situations. To take this into account, the researchers collected as much information as possible, and made the study broad. This way, a reader with a similar problem at hand can decide if this case is helpful. However, as this study is hermeneutic, it is not readily generalizable outside the frames of this area. The authors wish to underline, once more, that generalization is not a main purpose in this research and as mentioned in section 1 the purpose of a case study is not to present generalizable results. The value instead lies in specific case knowledge and solving a unique problem.

### **4.3.2 Reliability**

It is hard to reveal the reliability of this study, since the researchers make no claim to present an objective truth. Findings have been subjectively interpreted to investigate the problem at Dep. X. Another independent researcher performing the research would probably not do it in the same way. Perhaps another researcher would hypothesize other factors to test and do the investigations in another way. Also, one of the main data sources in this research is the interviews. The proceeding of these was very flexible, as they were semi-structured, and all in all, the answers were snapshots of what the respondents experienced at the moment. The work in a department like this one is complex and many factors interplay. Therefore, the researchers are not eager to claim the reliability of their research. This will be for the managers at Dep. X to judge. The reliability of the interviews could have been increased by posing the same questions again in a different form or by repeating the interview at a later date, but the researchers found that the cost of doing so would outweigh the benefit.

Apart from this there are a couple of other question marks to consider. The received surveys from Dep. Y were fewer than expected; the authors only got 11 returned out of a total 25. This means that some conclusions drawn from the data collected might not be completely accurate. Apart from this were two of the interviews from Dep. Y conducted over the phone which leaves a higher risk for misunderstandings and misinterpretations. Also due to shortage of time and because of the geographical location of Dep. Y the authors were unable to make the same observations of damage levels there as in Dep. X and they did not have the possibility to attend the morning meeting at Dep. Y. All these factors negatively affect the reliability of the comparison between the two departments.

### **4.3.3 Objectivity**

As one of the researchers is employed at Dep. X, the reader would perhaps question his authority and credibility. However, all of the researchers have made an effort to partake in the entire research process and have had thorough discussions throughout the progression. The authors have found that their opinions correspond and the employment of one of them has only made the research more insightful.

Moreover, the data are supplemented in full text in the appendices, in order for the reader to infer how the researchers came to certain conclusions. Data are honestly represented and analyzed.

## **4.4 Ethical Considerations**

Even if this research is performed for Dep. X, the warehouse wishes to stay anonymous due to competitive reasons. The negotiation of access was done on the basis of this secrecy. The authors and the warehouse agreed that the authors were allowed to elaborate very informatively about the operations of the department and information about the warehouse chain as long as its name was never mentioned, so the thesis would not appear in web searches on the company name.

Also, the respondents are anonymous. The researchers have had to take this into account in their reporting of findings. Characteristics that could perhaps been used as variables among respondents (that is, more than how long they have worked at the company) have been excluded to ensure their anonymity.

## 4.5 Proceeding of the Research

To begin with, the authors joined in on the wish to do a study within the field of cost management. Since one of the authors happened to be working at Dep. X, and has much insight in the cost situation there and holds the trust of the managers and employees, the authors quickly decided that there was where they wished to perform their research. The entire research is a case study of the cost problem at Dep. X, but the construction of it is a bit unconventional, since it has had an abductive approach.

First, as presented in section 2, a pre-study was performed. The aim of this study was to develop greater insight into the operations of Dep. X and the cost problem. After the conduct of the pre-study, the authors consulted relevant theoretical research, such as motivation and communication theories. This theoretical frame was important at this stage since it could be of value for the construction of the research. However, as stated in section 4, the authors were not convinced that the theories would come in handy at this point in time. The theoretical frame was used more as supplementary guidance to insights developed in the pre-study.

Next in the research, when the authors had hypothesized some problem areas in Dep. X, they crafted a research proceeding that would answer the question of what the reason is for the large damage costs. A series of interviews, a survey and an investigation of damage levels would be performed both at Dep. X and at a comparable department; Dep. Y, which does not experience these damage cost issues. To this extent, the research is hence a benchmarking study. However, the researchers have not been able to perform the research in exactly the same manner in both departments, so the findings from Dep. Y have been used with caution. This shortcoming is further elaborated on in section 4.6 below.

Also, it must be noted at this point that the research took new turns at times when certain findings were revealed. For instance, the authors did not intend to hand out surveys to as many respondents as they later on did. This was due to that the authors realized the importance of giving the surveys to more respondents only after having conducted some of the interviews. Moreover, the authors realized in the middle of the research that it would be preferable if they could interview a manager at the warehouse's supplier, to investigate the damage reporting done both at Dep. X and at Dep. Y.

Below, the proceeding of the different research areas is explained.

### 4.5.1 Interviews with Logistics Manager, Group Manager and Employees

The interviews are considered a large weight in the research, since that is the one part of the research that may actually explain **why** damage levels are so high at Dep. X. Observations, for instance, only shows what happens, not why. By this, the researchers mean that the interviews will result in the richest data.

#### 4.5.1.1 Selection of Questions

Before the researchers held interviews with the logistics manager, group manager and employees at the department, they drew a mind map and tried to figure out the possible underlying reasons for the damage goods costs (see Figure 11). This was mainly based on the pre-study and own insights. With the help of the mapping they could see a clear picture of the problem and possible underlying reasons for the damages and the cost the damages resulted in. With the help of the mapping, the authors formed applicable questions that would help them in their investigation (appendices 3-7). The mapping was also the basis of



the survey questions. These questions concerned communication of knowledge, motivational factors and work environment issues. Also, a general question was formed on the respondents own opinion on what could be done to improve the damage situation at Dep. X.

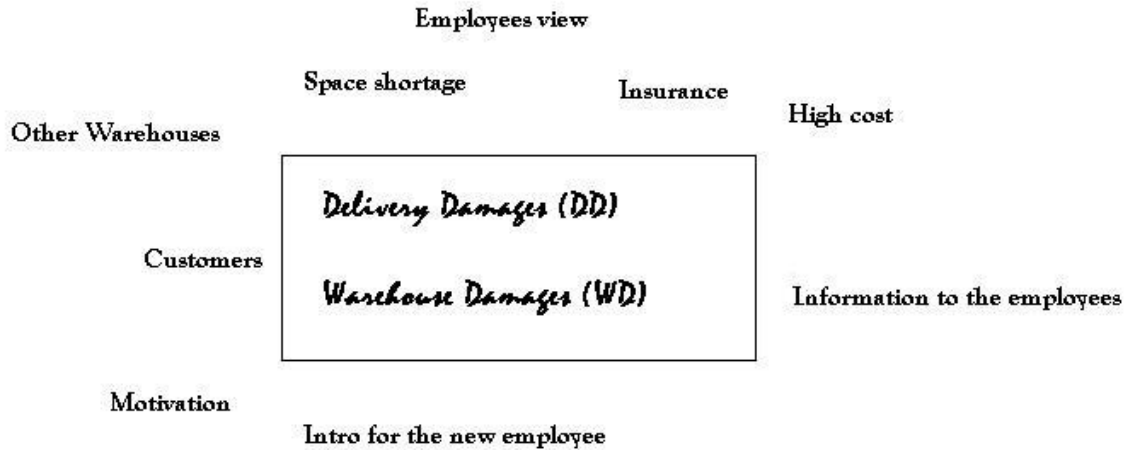


Figure 11 Mapping of Issues at Dep. X, Made in Order to Construct Interview Questions.

Semi-structured interviews were considered to be the best approach due to the partly explanatory purpose of this study. However, the managers were asked certain questions and employees were asked other questions, since they have different responsibilities and work tasks, and all of the same questions cannot be relevant for both managers and employees. Forms for structure and support, listing relevant questions, were made. A form with questions was made for the employee interviews (appendices 6-7), and another initial form was made for the manager interviews (appendices 3 & 5). However, this form had to be revised (appendix 4) for the interview with the group manager at Dep. X, since the authors found it interesting to reveal more of his opinions and since he seemed to be most knowledgeable about the operations of Dep. X. Some closed questions were asked to obtain specific information and confirm opinions, but the interviews consisted mostly of open-ended questions. The authors then evolved the questions when necessary during the interviews, and let the interviewee elaborate quite freely. Depending on respondents' answers, proper attendant and probing questions were asked. The research would gain most from open questions as they give room for flexibility, the authors believed.

#### 4.5.1.2 Selection of Respondents

Stage number two before the interview was the selection of respondents the authors were to interview. So they picked out five persons, with the following roles (presented in table 2), in the departments.

Department	Dep. X	Dep. Y
Position	Logistics manager	--
	Group Manager	Group Manager
Employees, properties	Forklift operator (permanent). Worked for 17 years.	Forklift operator (permanent). Worked for 28 years.

	[E1]	[E4]
	Forklift operator (paid by the hour). Worked for 5 years. [E2]	Forklift operator (paid by the hour). Worked for 1, 5 years. [E5]
	Forklift operator (paid by the hour). Worked for 4 months. [E3]	Forklift operator (paid by the hour). Worked for 4 months. [E6]

Table 2 The Respondents in the Conducted Interviews.

The logistics manager and the group manager were included in the study since they are the managers working at Dep. X, and have insight into logistics damages. The other three employees are of great importance because workers are the ones that come in contact with the DDs and WDs in their daily work. However, this research does not cover a census sample even if that would have been desirable, due to time, practicality and access restrictions. Therefore, the researchers chose to interview three of them, only on the basis of how long time they had been working at the company, since the authors believed this will affect their attitudes towards their work and more specifically towards damage control and reporting. This sampling technique is called non-probability sampling, which carries the implication that generalizations cannot be readily made outside the sampling frame. Still, this technique was chosen as it allows for judgment in sampling and is easy to perform.

More specifically, quota sampling was performed, where one subject was chosen from each stratum; the strata here being the amount of time the respondents have worked at the department. These five interviewees work together; their relation to one another is illustrated in figure 12. The logistics manager is responsible for the entire department, but the group manager works closer to the employees. However, the corporate culture stresses that managers as well work on the floor often, so the employees work alongside the logistics manager as well, with different tasks. By interviewing these five respondents, the authors would reveal each one's perspective on the cost problem. The authors needed to obtain a good understanding of the workers opinions and perceptions to determine the concrete underlying reasons for the damage costs that occur in the warehouse.

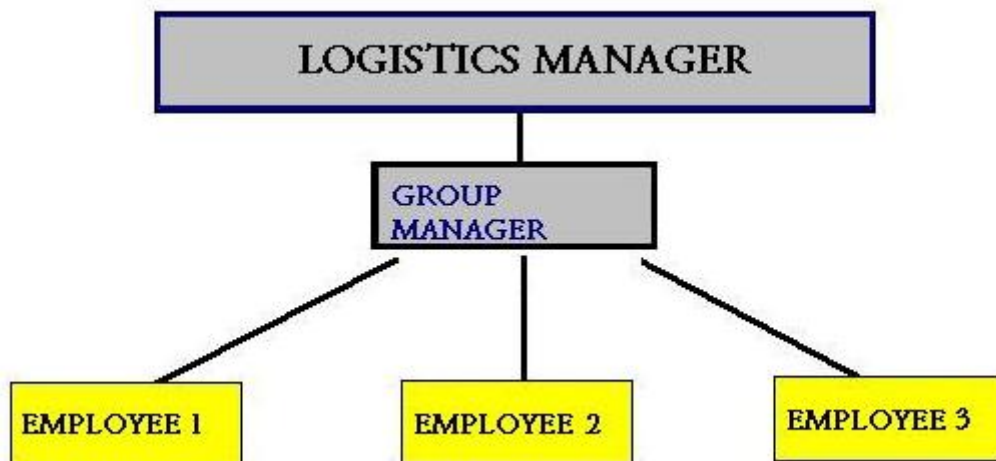


Figure 12 Schematic Structure of the Respondents' Relation to One Another. (Own Figure.)

#### 4.5.1.3 Setting

The interviews took place at a neutral setting, after the respondent's choice, so he/she could relax. The managers were interviewed at their respective warehouses. Two of the employees at Dep. X were interviewed at the warehouse, and the third was interviewed at a coffee shop. One of the employees at Dep. Y was interviewed at the warehouse, and the others were interviewed by phone. A tape recorder was used in all interviews where the researchers and respondent met in real life and the phone interviews were conducted at speaker phone so they could also be taped. Of course, the researchers asked for consent in taping the interviews and this was no problem for any of the respondent. Also, they were informed that they could withdraw from the research at any time or avoid answering questions if they felt uncomfortable. Also, they were informed that their answers would be anonymous. Therefore, they will only be named E1-E6 and the only information given about them will be how long they have worked at the department.

The reason for why the authors taped the interviews was for them to be able to listen to responses once more, in order to ensure the researchers understood answers correctly. The researchers wrote down comments about behavior as well as citations during the interviews. Still, the interviews were afterwards written down in full text, excluding only grammatical or syntax errors, and a few adjustments to make them coherent. The full records are found in appendices 3-7.

#### 4.5.1.4 Data Processing and Analysis

The results of the interviews are long accounts of responses. These were cleaned up linguistically and grammatically. To categorize, the answers were divided into the hypothesized problem areas in the results, analysis and conclusion sections. This made the data more manageable and comprehensive. The researchers discussed the answers, tried to establish relationships and contradictions and tried to depict problem areas. Also, the answers will be linked to the theoretical frame. At the analysis stage, parallels were drawn towards the data collected from the surveys and investigation of damage levels. This way, the hypotheses were tested and a conclusion drawn.

## **4.5.2 Surveys**

Additional to the interviews that were made, the researchers also decided to carry out individual ad hoc surveys directed at more of the employees, in order to give the research a backbone and obtain a clearer picture of the damage situation. The surveys were conducted both in Dep. X and Dep. Y.

### **4.5.2.1 Selection of Questions**

The survey was self-administrated, constructed in a way that would make it easy to answer and that would not take much of the workers time, because of their busy work schedule. On top of the sheet, there was a short text explaining the purpose of the study and the general character of the questions. Filling out the survey took approximately 5 minutes. Questions were short and to the point, to ensure a large response rate. While a few required a full sentence to answer them, most required only one word.

The researchers aimed at figuring out what respondents think and how they behave in their work. Questions were directed at finding out if the respondents knew what DDs and WDs were and if they knew whose responsibility it is to report and remove damaged products. These issues concern if knowledge is communicated to the workers properly. Also, the researchers were interested in the motivational aspect of cost savings; if respondents knew where cost savings end up. Two questions were directed at how respondents took part of information; via e-mail and via the notice board. Also, a question concerning the work environment, namely the work load, was asked.

Answers to the surveys, in short form, can be found in the results section, as well as in the appendices in their entire length. In appendix 8, questions as well as responses to the survey at Dep. X can be found. In appendix 9, questions as well as responses to the survey at Dep. Y can be found.

### **4.5.2.2 Selection of Respondents**

Many of the employees that are dealing with damaged goods participated in the survey, to strengthen the weight of the results.

In the survey sampling, the researchers used a probability sampling technique, namely stratified sampling, because this technique is better than random sampling, as it reduces sampling error. Also, because the researchers suspected there were relevant differences among the strata. The subsets, in the population of employees at Dep. X, were ‘forklift [FL] operators’, ‘pallet jack [PJ] drivers, and ‘customer shelves [CS]’ personnel. The researchers carried out 20 surveys, divided in the following way among the workers; approximately 10 FL, 5 [PJ] and 5 [CS]’. The reason why the proportion of FL operators was so great was because those workers are the only ones that encounter DDs, and they are also the ones to mainly encounter and report WDs on a daily basis, and they work at the logistics department. For this reason, the researchers wished to have a greater proportion of FL respondents, as they are more relevant than the others. The other 10 surveys were included to contrast the answers, and reveal if the respondents at different departments and with different work tasks were truly aware of their responsibilities. The task of CS personnel is to accept responsibility for the products during opening hours, after the FL operators have performed their work, and hence, they hold an important perspective. The PJ drivers refill the store area, and thus hold a responsibility in reporting WDs, and they were included in the survey to reveal if they were aware of this.

#### **4.5.2.3 Setting**

The surveys were given at different times, since all employees are not present simultaneously at the departments. The researchers wanted to perform the surveys with physical contact, to build trust, inform them about the purpose of the survey as well as achieve a high frequency of answers. This was done at Dep. X. However, it was not possible at Dep. Y. Here, the researchers had to leave the surveys to the group manager and he distributed them to respondents at different times.

#### **4.5.2.4 Data Processing and Analysis**

The survey responses were compiled into the different categories of employees; FL, PJ and CS employees. The results can be found in appendices 8-9 and consists of tables reporting, for the first five questions, on if the answer to questions was correct, for example if the respondent knew whose responsibility it is to report a certain damage. The last three questions were compiled by Yes/No answer, for instance if they considered their workload to be too large.

Since the surveys were performed with 20 of the approximately 50 employees at the logistics department, and this is a quite large proportion [40%], the results may be considered quantitative findings. These results were compiled into statistics, since that made them easier to interpret and comment on. It was investigated how many of the employees that were aware of their responsibilities versus what the managers believe, and these figures were compared between Dep. X and Dep. Y. Also, the other questions in the survey were analyzed in comparison to managers' beliefs and to what would have been preferable answers.

#### **4.5.3 Investigation of 5 Minute Meeting**

The researchers also performed a participant observation ('observer as participant') of the five minute morning meeting at 5 am at Dep. X to form their own opinion and interpretation of it, and mainly to see if a lot of and what kind of information that is communicated to the employees. Mainly, the authors were interested in what way the group manager mentioned DDs and WDs. Alongside with attending to listen to the information, the authors also stayed for approximately 10 minutes to monitor the work flow.

In Dep. Y, the authors were unfortunately unable to attend the morning meeting and only got information about it through the interviews.

##### **4.5.3.1 Data Processing and Analysis**

Since this part of the research is observational, the authors have no figures or answers from respondents to this part. Instead, a qualitative account has been made on what happened at the meeting. The data outcome was primary, as the researchers noted everything that happened and was said. To a certain extent, however, the data is also experiential, as the researchers noted their own opinions and feelings and what seemed to be the feelings of the subjects that were present. The authors then compared the outcome of this with what the point of the meeting is, to see if they corresponded. The point of the meeting is informing employees enough for them to be able to conduct their job, with focus on DDs and WDs. In section 7 the meeting is analyzed and focus is on whether or not the aim was met.

#### **4.5.4 Investigation of Damage Levels**

After the interviews with the two managers, the authors got split depictions about the damage situation in Dep. X. The logistics manager claimed the main problem leading to damaged goods was that the employees did not have adequate education about WDs and DDs and how to report them. The group manager, on the other hand, drew an entirely different picture where the customers were in focus, causing most of the damages. Two managers with two different views caused a tricky situation for the authors, a state that had to be inspected, before they could go on with the thesis. The researchers therefore needed to find out how efficient the reporting and removing of WDs were at the warehouses and how both FL, PJ and S and CS personnel behaved towards the damaged goods; if they took their responsibility to keep the warehouse in a clean condition.

##### **4.5.4.1 Setting**

The researchers constructed an investigation, the main demand was that it would be easily understood when findings would be presented to Dep. X. Also, it is too complicated and time-consuming to investigate the whole warehouse and go through all the product series for WDs. So the researchers decided to perform a simple test. At three different times during opening hours they decided to visit the warehouse and note the number of damaged goods, as well as messy areas, that were very easy to spot. The criterion was that the product would be easily detectable and obviously damaged in a way that would make it unsellable. The criterion for the messy areas was unacceptably untidy areas that needed to be cleaned up for the store to look in a good condition. Examples include wrongly placed goods and empty packages. The definition of a damaged product in this investigation is a product group. Thus, several of the same products could be damaged, but are counted as one, since they lie at the same place and were to be detected simultaneously. The researchers noted how many such damages and messy areas there were in both the store area and the CS area at the different hours to see how many of the WDs that were recovered and how many of the messy areas that were cleaned up by the personnel that was working.

The first visit was at 2 pm, the middle of the day. At the second visit, at 7 pm, just before closing time, the researchers went back to investigate the same goods and see if they were ordered, replaced or removed by the workers during that period of time; S and CS personnel, and also see if other damages had occurred, inflicted by customers. The last visit, at 10 am (opening time) the next morning, would show the authors if new damages had occurred and what happened to the old ones during the logistics personnel shift. During this period of time, PJ and FL personnel had been working. This little test would clear up the situation to some extent on the magnitude of the customer impact. Also, it would show the contribution of the different kinds of employees; if the workers took their responsibility as they should at different hours of the day.

##### **4.5.4.1.1 Dep. X Versus Dep. Y**

This test was first conducted at Warehouse X and then at Warehouse Y. The authors do not name them Dep. X and Dep. Y now, since the investigation was conducted both in the store area and in the CS area. However, there was a difference between the tests in X and in Y. The one at Warehouse X was done during the above mentioned period of two days, while the test at Warehouse Y was done merely during a period of one day. The reason for this difference in the study is related both to time resources and geography.

Therefore, at Warehouse Y, one visit was made at 10 am in the morning and a second one at 3 pm in the afternoon. In this investigation, only some of the impact of customers as

well as some of the contribution of S and CS personnel will be revealed. (While both CS and S, as well as PJ and FL personnel were investigated in Warehouse X.) However, a quick run through of the warehouse was done at Y to control the general level of WDs.

The findings of these investigations are found in section 6.

#### **4.5.4.2 Data Processing and Analysis**

The researchers discussed the statistics of the investigation, to see if certain employees do not take their responsibilities seriously or if customers inflict many damages, thus reveal potential problem areas. At the analysis stage, parallels are drawn towards the data collected from the surveys and interviews. This way, the hypotheses was tested and a conclusion was drawn.

#### **4.5.5 DD Reporting- Comparison of Dep. X and Dep. Y**

For the researchers to reveal if Dep. X is in fact worse at reporting DDs than Dep. Y, they would also investigate the statistics of reported DDs in Dep. X as well as Dep. Y for the period September 2007 through September 2008.

##### **4.5.5.1 Setting**

To acquire the needed statistics, the researchers contacted the “Head Distribution Central of Products” for the warehouse chain. Fortunately, both warehouses have the same DC, which meant the researchers would only need to meet with a manager at this DC. Also, the implication for the research is that since the same supplier sends freight to both warehouses, one would expect the DD levels to be approximately the same, proportionally.

The researchers got in contact with one of the group managers, who is responsible for DDs, at the DC. He presented the DD statistics from Dep. X and Dep. Y and explained it thoroughly. He also explained the rules of how the pictures of a DD should be taken and the criteria to get back money on DDs for the warehouses.

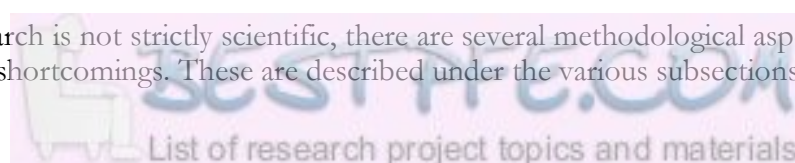
##### **4.5.5.2 Data Processing and Analysis**

The numbers of reported DDs at Dep. X and Dep. Y is compiled in Table 6, in section 6. Also, the figures were supplemented by their statistical proportions. To understand the table, some explanations of concepts are also presented. In the analysis, the researchers compared the two departments to see if any patterns were revealed.

### **4.6 Shortcomings of and Reflections on the Research**

In general, this research has been very time- consuming, due to that the authors chose to approach a specific problem, aiming at solving it for Warehouse X. Also, since the purpose has been to reveal the problem at the department, the researchers have found themselves taking on a very large task. The scope of the research expanded from merely surveys to include interviews and investigations as well. Still, the nature of the problem is so unique and complex, that the researchers would have wanted to spend more time doing research; more interviews, more surveys and more investigations. The time at hand for this project did not allow for this, sadly.

Since this research is not strictly scientific, there are several methodological aspects that can be considered shortcomings. These are described under the various subsections below.



As the case at hand is a practical and specific one, some of the authors' hypotheses have been difficult to relate to essential scientific theories. For example, while flaws in communicating knowledge, flaws in motivation and also to some extent flaws in working environment could be connected to scientific theories, flaws concerning customers could not be connected in the same way. There is hence a mix of inductive, deductive and abductive research in this examination.

Also, the scientific aspect of the research can be questioned. It will be hard for the reader to follow some of the interpretative roads the researchers have taken in analyzing and compiling the empirical findings. This is often easier if the outcome of research is hard statistics, compiled from SPSS. In this research, hypotheses have been based a lot of hunches and analysis has been based a lot on common sense and own interpretation, making it subjective. Additionally, the potential conflict between being an objective researcher and an employee at the department for one of the authors has been an issue all along, as has been pointed out earlier in this thesis. This has also led to that the research has become even more time-consuming, since the other two authors have critically reviewed all his contributions.

#### **4.6.1 Interviews**

Since the problem at Dep. X is largely unknown, the researchers have hypothesized and constructed questions for the interviews according to this. Although, the forming of the questions and the focus of them can be criticized for being subjective, especially since one of the researchers is employed at Dep. X. However, this is not necessarily a shortcoming, since the researchers consider themselves very knowledgeable concerning Dep. X and the cost situation. And what better way is there to construct questions than by observing the department from within and being subjective.

After having held the interview with the logistics manager at Dep. X, the researchers realized that the questions needed to be worked on, and that more questions need to be asked to the group manager. Therefore, the questions to these interviews do not correspond exactly. However, the findings do not suffer from this, since the logistics manager did not have too much knowledge in the field of the additional questions asked to the group manager.

Also, at Dep. Y, only the group manager was interviewed. This was due to that the logistics manager could not find the time to do the interview and also because the group manager and logistics manager at Dep. Y talked about the questions that were to be asked beforehand and came to the conclusion that they would respond in the same way, so they felt it unnecessary for both of them to partake in the interviews. However, this is sad because one of the suggested problems at this stage was that a problem in Dep. X was the flawed communication between the two managers. (As has been mentioned in section 2 about the pre-study, and as will be presented in the empirical findings, these managers hold quite different views on the operations of Dep. X as well as on the damage problem.) Therefore, it would have been of interest to investigate if the managers in Dep. Y actually do agree about DDs and WDs and the operations of the department to a greater extent than the managers in Dep. X do.

What is more, the participant bias, which is quite common in these kind of interviews where the behaviors and attitudes of employees at a problemized workplace, is not considered an issue in this research. Participants may give inaccurate responses due to that they wish to appear better than they really are. However, this is where the researcher who is employed at



the department comes in handy. Not only did he build trust during the interviews with the employees, he would also have known if respondents tried to distort results. Concerning the interviews with the managers, on the other hand, this cannot be ensured to the same degree.

The issue of interviewer bias is more relevant in this research, since the interviews were semi-structured, and the researchers asked probing and attendant questions when answers were not satisfactorily elaborated. It cannot, in fact, be known if respondents were affected by this in their answering. If present, this bias was reduced by taping the interviews and making full records of them to ensure the interpretation of answers was correct.

#### **4.6.2 Surveys**

Furthermore, the questions in the survey were designed in a way that made it difficult for the authors to interpret the answers and compile them into tables. Answers to the open-ended questions sometimes differed so much, so the researchers found it was the best to compile the findings by the criteria if the respondent had answered correctly or not. This is however explained more thoroughly in appendix 8-9. This shortcoming could probably have been avoided by doing a pilot survey beforehand. However, the findings are relevant and useful anyway, so the research does not suffer from this either.

The researchers compiled the data into tables and calculated statistics for what percentage of the employees answered the knowledge questions correctly. This quantitative data outcome can be questioned, as it is a small sample of 20 respondents at each department. Although, it is a large proportion; approximately 40% of the employees at Dep. X, but significantly less at Dep. Y answered the survey.

#### **4.6.3 5 Minute Meeting**

The 5 minute meeting was observed one morning only. The purpose was to examine what the focus of the meeting was and especially if the group manager mentioned DDs and WDs. This purpose was accomplished, but one could question if it is enough to visit merely one of these morning meetings to obtain a clear picture of this, due to the potential time error. An example of this is when the researchers happen to be present at a day when productivity was unusually low. Also, in attending, the researchers may alter the results by their mere presence.

#### **4.6.4 Investigation of Damage Levels**

Due to the fact that the authors were unable to repeat the exact same investigations and routines in Dep. Y as were conducted in Dep. X, the benchmarking between these two could be questioned. The data show the contribution of all personnel at Dep. X and only for some of the personnel at Dep. Y. Also, the difference in impact of customers cannot be revealed, but this is not necessary, since the researchers do not believe that customers behave radically different in the two warehouses. These findings are of course still useful, since the focus of this research is Dep. X, while Dep. Y is only investigated for comparison.

On the other hand, it must be mentioned that this investigation was only done at one occasion. Generalization is thus impossible, since this could be a bad or good day. For weightier results, the researchers should have performed the investigation numerous times. However, the researchers did not find the time to do this.

#### **4.6.5 DD Reporting- Comparison of Dep. X and Dep. Y**

The statistics of reported DDs in Dep. X as well as Dep. Y that the researchers got hold of was for the period September 2007 through September 2008. While a period of one year is sufficient for this investigation, since it was not of interest to investigate this longitudinally, one might perhaps have wished to split the figures up into monthly statistics, instead of merely annual.

## 5 Theoretical Framework

---

*In order to later on interpret the findings of this research, the researchers, and the reader as well, will need the background information accounted for in this section. The authors report basic theories and previous findings in the field of communication and motivation and briefly touch upon the subject of logistics. The broken window theory is also presented. The theories in logistics are meant to give the reader a broader understanding while the theories concerning communication, motivation and working environment are meant to be used in order to solve the problem at Dep. X.*

---

### 5.1 Logistics

Logistics is a broad concept, covering all processes in the supply chain (Harrison & van Hoek, 2008). It is the planning, conducting and controlling of flows of information, material, products, services and money. The design of logistics operations is determined mainly from the customers' demands and its goal is to meet those demands as effectively as possible by coordinating available resources and functions (CSCMP, 2008). This is a great challenge in all companies.

In the current company, the authors will limit themselves to the logistics of Dep. X, where the problem is the 'waste of defects', as it is termed by Harrison & van Hoek (2008, p. 195). Deficiencies are resource-consuming, Harrison and van Hoek (2008) claim, and the further down the supply-chain the defect goes, the more it will cost the company. If a customer buys a damaged product and notices it at home, the customer will have to return it, which will not only hurt the relationship with the customer, but also be costly in return handling costs. Therefore, it is vital for companies to extend their defects work to their suppliers, so companies get as little incoming defects as possible (Sadler, 2007). For instance, while it may be in the interest of the supplier to send full loads of freight, this may not be cost effective if half of the goods arrive broken at their destination. Also, companies need to focus effort on in-house operations, since defects may appear here as well. One vital aspect of this work is to make sure there is enough space for housing all products, but not so much that they become dispersed.

Further, this thesis will deal with information logistics. The authors believe that communication of work tasks may be a challenge in the logistics operations at Dep. X. More information on communication is given in section 5.3.

#### 5.1.1 Costs of Poor Quality (COPQ)

To give the reader a broader understanding of the problem associated with logistics, different types of costs that are associated with logistics and poor quality will be presented. These will also emphasize the importance of preventing damages before they occur, or as early as possible, as this saves the company a great amount of money. This theory is also used in the analysis to emphasize the importance of working with pre-emptive measures.

The term COPQ is explained as the total sum spent on prevention, appraisal and failure costs (Krajewski & Ritzmann, 2005). These can be divided into four different categories: internal failure costs (associated with defect goods that are found before the customer receives it), external failure costs (associated with defect goods found after the customer has received it), appraisal costs (incurred to determine the level of conformance to quality requirements) and prevention costs (incurred to keep failure and appraisal costs to a minimum. These can further be regarded as controllable poor quality costs (appraisal and pre-

vention) and resultant poor quality costs (internal and external failures). For a more structured review on COPQ, consult table 3 below.

#### **5.1.1.1 Prevention Costs**

Prevention costs are things identified before they occur (Krajewski & Ritzmann, 2005). They involve costs such as redesigning the process to remove the cause of poor performance, redesigning the product/service to make it easier to produce, educating employees in the methods of constant improvements as well as working with suppliers to raise the quality of purchased items or consumed services. In order to make performance more efficient, companies have to invest money, effort and additional time.

#### **5.1.1.2 Appraisal Costs**

According to Krajewski & Ritzmann (2005), appraisal costs are costs associated with measuring, evaluating or auditing products to assure conformance to standards or requirements. This could for example mean test and inspection, supplier acceptance sampling and auditing processes.

#### **5.1.1.3 Internal Failure Costs**

Internal failure costs, as mentioned above, are all costs that are revealed before the product or service reaches the customer. For example this could be scrap, rework, overtime (poor quality related) and re-inspection.

#### **5.1.1.4 External Failure Costs**

According to Krajewski & Ritzmann (2005), external failure costs arise when a customer discovers a defect service or product after she has received it. Examples of this are processing customer complaints, field repairs, recall costs, returned goods, warranty costs and loss of reputation.

Clarke (1999), in his book *'Success through quality'*, discusses the idiom, "one ounce of prevention is worth one pound of cure". This basically means that if you prevent a problem in the earliest stage it will save you a lot more money than if you solve it later in the process. For example, it could cost one dollar to prevent a problem, ten dollars to find it and one hundred dollars to fix it.

CONTROLLABLE POOR-QUALITY COST		RESULTANT POOR-QUALITY COST	
Prevention cost	Appraisal cost	Internal error cost	External error cost
<ul style="list-style-type: none"> <li>*Quality planning</li> <li>*Customer surveys</li> <li>*Marketing research</li> <li>*Education &amp; Training</li> <li>*Design reviews</li> </ul>	<ul style="list-style-type: none"> <li>*Receiving inspec.</li> <li>*source inspec.</li> <li>*Test</li> <li>*Quality audits</li> <li>*Auditing process</li> <li>*Outside certifications</li> </ul>	<ul style="list-style-type: none"> <li>*Scrap</li> <li>*Rework</li> <li>*Design changes</li> <li>*Downgrading</li> <li>*Re-inspection</li> <li>*Overtime-poor quality related.</li> </ul>	<ul style="list-style-type: none"> <li>*Field repairs</li> <li>*Recall costs</li> <li>*Returned goods</li> <li>*Warranty costs</li> <li>*Loss of reputation</li> <li>*Processing customers complaints</li> </ul>

Table 3 COPQ. (Own Figure, Derived from Cost of Poor Quality, 2008.)

### 5.1.2 Previous Studies in the Field of Logistics

Few studies have been made regarding the topic that the authors have chosen. The problem at Dep. X is a very specific one, and though logistic departments or companies have been forced to deal with damaged goods since the dawn of time, companies have different routines and strategies for coping with the problems they face. The authors have found studies or reports that concern a subpart of their topic, for example transportation costs and damages within the transportation sector. Although, these studies have had very dissimilar purposes and theoretical frameworks, which means the authors have not been able to use them more than slightly for reference assistance.

## 5.2 The Power of Context- Broken Window Theory

This theory is used as one of the cornerstones in the analysis, when it comes to flaws in working environment.

Malcolm Gladwell (2001), in his famous book *'The Tipping Point'*, describes the scene in New York, where crime had reached colossal proportions in the 1980s and early 1990s and then dropped sharply. His theory is that the increase happened because crime follows the same pattern as epidemics. But the interesting thing is why it so suddenly came to a halt. 'The Power of Context' is a theory suggesting that conditions and circumstances in times and places affect a mighty deal of outcomes. Small things in our context affect our behavior tremendously. In NY, illegal drug trade spawned violence and unemployment and minor problems, like graffiti, acted like invitations to more serious crime (Gladwell, 2001).

David Gunn was the man who put 'the Broken Window theory' into practice, through cleaning the NY subways from graffiti and William Bratton was the transit police leader

who acted very seriously on fare beating. Although, the Broken Window theory is the brainchild of criminologist James Q Wilson and George Kelling. Their idea is that crime is a result of disorder. If something, even small, is broken or messy, people who walk by get the impression that nobody cares and no one is in charge. More things will be broken, in the end resulting in chaos and anarchy. A signal is sent, saying “anything goes”. There is an agreement among social criminologists and police officers that leaving a window broken will result in all other windows being broken as well (Broken Windows, 1982). Since behavior is contagious, the problems will snowball. The tipping point to chaos can be a person, acting in an ignorant manner, as well as something physical, like disorder (Gladwell, 2001). So while the benefit of fighting minor disorder may not seem worth while compared to the cost spent on it, one must bear in mind that small efforts may lead to larger changes.

In NY 1994, Mayor Rudolph Guiliani appointed Bratton as the head of the NYC Police Department to use the same strategy in the city at large as he had used in the subways. Crime fell drastically! Bratton realized the solution was that tinkering with small details would reverse tipping points (Gladwell, 2001).

Psychologist Philip Zimbardo reported on some Broken Windows research in 1969, where he had placed a car without plates in Palo Alto, California, and another one in the Bronx (Broken Windows, 1982). The one in the Bronx was vandalized within minutes, and as soon as one person had attacked it, others joined in. The car in Palo Alto was left untouched for several days, until Zimbardo broke part of it with a sledgehammer. That was all it took for others to join in on the sabotage. Within hours, that car was destroyed as well. An important note to make is that the vandals appeared to be mainly respectable adults.

The implication from this social- environmental theory is that because behavior is a function of social context, trends can be turned around if minor details are dealt with. This also concerns the behavioral patterns of the workplace. If one person puts a good example in reporting damages, others will follow. If the work area is always clean, workers will not willingly be the ones littering it. On the other hand, if the workplace is untidy, no one will make an effort to throw that piece of string in the litter-bin rather than on the floor. If the store is messy and not cleaned by employees, customers will not feel guilty if they make even more of a mess. If the shelves are full of damaged products, no one will care about reporting them all. But if only one damaged product protrudes from the otherwise orderly store, employees will feel obliged to remove it, since it does not belong there.

This theory will be used as support for suggesting some minor adjustments to Dep. X, as noted mainly in comparison with Dep. Y, but also at the investigation of damage levels at Dep. X.

### **5.3 Communication Theory**

To look closer into the hypothesis that the problem at Dep. X is caused by flaws in communication, the authors have chosen to present various theories within communication. These will then be linked to the problem, some to a greater extent than others.

The word communication is derived from the Latin word ‘communicate’, which means that something becomes in common. Communication is, according to Lind, Nilsson and Gustavsson (2006), the most important instrument for exercising leadership and unifying workers in an organization. According to Nilsson & Waldemarson (1990) it means that you convey or share something, for example thoughts, actions or values. Communication is thus a social process that takes place in a social system where the participants bring expec-

tations and attitudes that affect the messages that are exchanged. This interaction takes place through many different channels simultaneously, for example language and speech, behavior and distance. Through these, the message is conveyed and communication occurs.

### 5.3.1 Process School and Semiotic School

In his book on communication theories, John Fiske (1997) presents two different major schools that have had a large impact on research within communication. These are also acknowledged by Nilsson and Waldermarson (1990) in their book *Communication: Interaction between humans*, and are called the process school and the semiotic school. The process school regards communication as transformation of messages. It focuses on how the transmitter and the receiver codes and decodes the message plus how the senders use different channels and media to communicate- that is, the process conveying the message. This is illustrated in figure 13 below. Communication is regarded as a process through which a person affects someone else's behavior and mood. If the effect is different or less than estimated this school has a propensity of talking in terms of failed communication, and further investigating the different steps in the process to determine where the failure occurred. The process school often relies on social studies, such as psychology and sociology.

The second one, the semiotic school, regards communication as creation and exchange of opinions. This school focuses on how messages interact between humans to create meaning. It uses the term denotation and does not necessarily regard a misunderstanding as failed communication; this can be caused by cultural differences between a transmitter and a receiver (Fiske, 1997). This theory will not be explained further since the authors choose to focus on the process school as support for the analysis.

#### 5.3.1.1 Process School

##### 5.3.1.1.1 Linear Model

The most influential and acknowledged model within communication is Shannon and Weavers 'Mathematical theory of communications'. It was developed during the Second World War and was primarily focused on finding a way to optimize the use of different communication channels (Fiske, 1997).

Shannon and Weaver identify three different levels of problems in communication studies:

**Level A** How exactly can the symbols of communication be transferred?

(Technical problems)

**Level B** How accurately do the transferred symbols express the desired meaning?

(Semantic problems)

**Level C** How efficiently does the received meaning affect the behavior in the desired way?

(Efficiency problem)

The technical problems on level A are the most simple to understand. The semantic problems are also easy to identify but very difficult to solve. At this stage, there are cultural factors to consider, which are not specified by the model. The meaning is anchored as much in the culture as in the message. Efficiency problems could indicate that Shannon & Weaver regard communication as manipulation or propaganda. For example that A has not communicated efficiently with B when B reacts in another way than A desires (Fiske, 1997).

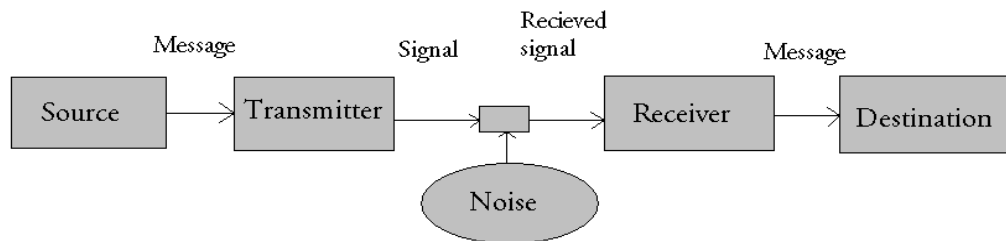


Figure 13 Communication; Transmitter and Receiver. (Own Figure, Derived From Fiske (1997).)

The communicating process starts at the source, who determines what type of message that is to be transferred. The transmitter then transforms the chosen message into a signal that is transferred to the reciever through a communication channel. Noise is everything that is added between the transmitting and the recieving and was not intended by the source. This process is presented in figure 13.

Feedback is a term that Shannon & Weaver do not use, but something that successors have pointed out as an important part of the communication chain. Shortly described, feedback is the transformation of the recievers' reaction back to the transmitter and gives the transmitter the possibility to adapt his message to the reciever's needs and a chance to give a response if the communication happens face to face. Other types of communication channels, where no face to face communication occurs, often mean that the possibility to give and receive feedback is strictly limited. Feedback helps the reciever to feel like an active part in the communication process. Through the fact that the transmitter takes the reciever's reaction into consideration, the reciever tends to be more inclined to accept the senders message. This makes the communication more efficient (Fiske, 1997). This model is used as a tool to analyze the communication at Dep. X.

## 5.4 Communication Within Organizations

Communication within organizations is different from many of the other forms of communication since it is expressed in very structured and formalized outlines. Factors like hierarchy, status and formalized organization schedules somewhat complicate the communication. One can divide organizational communication into two different types; internal, which concerns the communication taking place within the company walls, and external which mainly concerns the communication between suppliers, customers and other interested parties. In this thesis, focus will be primarily on internal communication. The theories explained below are used in the analysis.



### 5.4.1 Internal Communication; Formal and Informal

Internal communication can be further divided into two separate areas, formal and informal communication. The formal communication consists of official messages mediated by the company. Examples are information pamphlets, internal newspapers and other written information. Another way to communicate formally, although more indirect, is through the organizational culture. This sometimes expresses itself through organizational schedules that visualize a company's formal communication channels. In some organizations, formal rules are laid out in ways so that the employees cannot dodge the formal communication channels.

The informal communication consists of interpersonal communication that does not follow formal channels. Rogers & Agarwala-Rogers (1976) declare that the Hawthorne study, conducted between 1924 and 1933 in Hawthorne works outside Chicago, has shown that informal communication has a positive effect on employees' motivation and therefore also the company's productivity. The informal communication often contributes to whether or not a company reaches its goals. This is so even though the communication is not controlled by, and in many cases not directly influenced by, the management. While the formal communication to some extent is forced on the individuals within an organization, the informal communication often arises spontaneously. The informal communication is also often less structured and predictable than the formal. In difference to the formal communication, the informal communication takes place on all levels and in all directions within an organization; both vertically and horizontally.

## 5.5 Motivation Theories

After performing the pre-study, the authors came to the conclusion that one aspect of the problem was that the employees were not motivated to conduct the necessary work tasks. To further pursue this theory, the authors have chosen to look closer at Vroom's expectancy theory, as it would be the most relevant motivation theory to connect to the problem at Dep. X. But first, some general ideas within the field will be presented.

Tengblad (2003) discusses how employees must feel motivated in order to contribute to the organization in which they work. If they feel stressed or experience too large of a workload or unclear task structure, this as well results in a smaller ability to work for the organizational development. Boyens (2007) stresses that, especially at times when things change in the workplace, but also otherwise, management must continually communicate the expectations they hold on employees, what tasks they must perform and what the desired future state is. Also, employees must be motivated by informing them of how they will benefit from performing the work.

### 5.5.1 Vroom's Expectancy Theory

There is a strong connection between expectations and motivation. Vroom (1964) was the first to connect the two and his theory is to this date still very practicable. According to Vroom, there are two reasons why people work. First, there has to exist a gain or a reward for the individual, and second, the work must be motivating. This is where expectations come in, and they have an impact on motivation.

The individual experiences motivation in her work when she thinks that existing expectations can become real. Vroom (1964), in his theory, connects motivation, expectations and reward and stresses the correlation between these. He maintains that the individual has dif-

ferent types of goals that she wants to accomplish. A human being feels motivated when she believes that her expectations can be reached and that the reward she receives is of personal value. To describe the strength in one person's desire or valuation of a certain goal or result the term valence is often used. If there is a positive valence, the person desires the result. If the valence is around zero, the person is indifferent to the result. If the valence is negative, the person does not desire the result. The expectancy theory is also known as VIE; short for the correlation between valence (reward), instrumentality and expectancy. The three questions in figure 14 aid in explaining the correlation further.

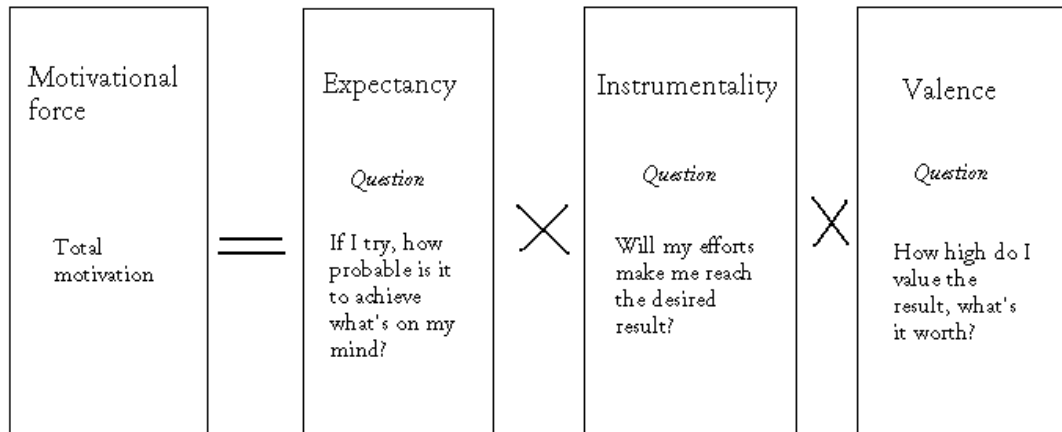


Figure 14 Expectancy Theory. (Own figure, Derived From Vroom (1964).)

The factors expectancy, instrumentality and valence can be any number between 0 and 1. To establish motivation, according to Vroom, the three factors shall be multiplied. If any of these factors happens to be zero, the motivation to achieve the given goal also becomes zero. Therefore, if the individual is to experience motivation, all three factors must be higher than zero (Arnold, Cooper & Robinson 1998). Expectations are the starting point when an individual makes a decision and this is based upon what result the individual believes he or she receives. It is this belief that psychologists call expectations or subjective conceptions (Vroom, 1964).

If you apply Vroom's expectancy theory on the recruiting process it means that the applicant has to expect that the offered reward for the intended work is of value to him, and also that the reward matches the performance. If the expectations that are created upon performance and valence are not fulfilled, the motivation to accept the job becomes zero. It means that the person is ready to look for a job elsewhere, or that her performance deteriorates. Both alternatives are negative for the company.

Vroom's expectancy theory can also be connected to the psychological contract that concerns expectations that exist between employers and employees. According to Isaksson (2000), these contracts can be pronounced promises or simply subjective interpretations of promises and undertakings. In distinction from the ordinary contract of employment, the psychological one can change and be affected by things that happen in the workplace. One of the areas Isaksson mentions, which is a common content of a psychological contract, is that a coworker expects to profit from his commitment. It could be in the form of economic exchange but also if the form of important business contacts or a career. Expecta-

tions do have an important role in the psychological contract and Isaksson is only one of many that have highlighted these consequences for both organizations and individuals. Isaksson claims that broken contracts lead to unsatisfied workers and lower trust in the management, which also affects the working satisfaction and employee loyalty. This does of course also generate a higher staff turnover. The model explained above is used in section 7 to analyze the effect employee motivation has on WDs.

## **5.6 Summary of Theories**

The theories are used for different purposes in the analysis section and to make it easier for the reader these are now explained. The theories regarding logistics and costs associated with poor quality are mainly used for providing the reader with an understanding of the concept and the importance of working with measures of prevention. Costs of poor quality are however referred to in the analysis section, though just briefly and again to emphasize the importance of preventing damages before they occur. The broken window is used as one of the main cornerstones in the analysis section; it is used as an analysis tool both regarding flaws in working environment and flaws concerning customers. The communication theories are used extensively; the communication within the organization is analyzed and Shannon & Weaver's model is used to explain where communication might have failed. Regarding the last part of this section, motivation theories are also used in the analysis section. Vroom's expectancy model is presented to highlight the connection between rewards and motivation, this will also briefly focus on the psychological aspects.

## 6 Empirical Findings of the Research

---

*This section will account for the results of the research. The findings of the interviews with managers and employees in both Dep. X and Dep. Y will be presented. A compilation of the survey results from both departments will be made. A short report on the 5 minute meeting in Dep. X will be made. Also, the investigation of damage levels will be accounted for, as well as the figures of DD reporting from Dep. X and Dep. Y. This section will present the findings in relation to the hypotheses in the problem discussion; that is, some data processing will also be made. The total findings, however, are presented in the appendices. Pre-study findings have already been presented in section 2.*

---

This section will be divided into interviews with managers, interviews with employees, the survey, investigation of damage levels, the five minute meeting in the morning and a comparison between the two departments obtained from the supplier. The interviews and the survey will be divided into the four problem areas. Regarding the other areas, since they were more observational, they will not be divided into the four problem areas.

### 6.1 Interviews with Logistics Manager, Group Manager and Employees

In order to give the authors a broader understanding of the problem with the high levels of damaged goods that Dep. X is facing, a total of ten interviews were conducted. In difference to the survey, the interviews were to be used as tools for analyzing the problem more deeply and to give the authors' hypothesis more credibility. First, the interviews with the managers will be presented, and after that the interviews with the employees. Both of these will be separated into the four hypothesized problem areas presented in the problem discussion. These were "flaws in communicating knowledge", "flaws in working environment", "flaws in motivation" and "flaws concerning customers". The interviews can be found in their full length in appendices 3-7.

#### 6.1.1 Interviews with Managers

A total of three interviews were conducted with managers. At Dep. X, the logistics [2008-10-07] and the group [2008-10-17] manager, and at Dep. Y, the group [2008-11-06] manager. The interview questions that were asked to test the hypotheses, along with the answers, can be found in the appendices; for the logistics manager at Dep. X in appendix 3, for the group manager at Dep. X in appendix 4 and for the group manager at Dep. Y in appendix 5.

##### 6.1.1.1 Flaws in Communicating Knowledge

The first of the authors' hypotheses was that the reason for why Dep. X is carrying greater WD costs than comparable warehouses is due to flaws in communication. This was the hypothesis that the researchers considered most relevant for the damage problem and the result will therefore be more thorough than for the following three hypotheses. The findings from the interviews with managers will be compared to the findings of the interviews with employees and the surveys to see if there are any differences in what managers believe the employees know and what they really do know. Below, the answers to the interviews will be presented shortly, Dep. X and Dep. Y separately. The questions related to this hypothesis can be found in appendices 3-5.

#### 6.1.1.1.1 Dep. X

When it comes to the awareness of DDs and WDs, the logistics manager believe that only half of the employees know the consequences for breaking, or missing to report damaged goods. Of course, the ones that have been employed longer are more aware of it. According to the logistics manager, they do not have any regular information about DDs and WDs but he sees no reason as for why they could not inform about it in the morning meeting. He also emphasizes that the reason for why the employees are unsure about how to handle DDs and WDs is the lack of important information not communicated to the employees.

As for the introduction, the logistics manager believes that the quality of it has been a bit uneven. When the department has a lot to do, the introduction suffers in quality. The introduction can of course be improved further, especially the follow-up of it.

The group manager talks about the introduction more thoroughly. The employees get two different introductions, first one at the personnel department when the employee gets her clothes and a tour of the warehouse and an introduction of the working environment. Then, there is the introduction at the logistics department. The group manager mentions that he has been the one to have done all the logistics introductions so far, since the material the warehouse supplies for introducing employees is very brief, and thus requires a lot of own experience. It usually takes an hour and a half in the CS department and about the same time at the external warehouse. Sometimes, the introduction is done with two employees at the same time if for example two employees are hired at once, or it could be that there is an employee that needs to freshen up the theoretical parts. After they finish with this introduction, the employees are encouraged to ask questions if there is anything that they are unsure about. However, there is no follow up other than the scheduled salary- and development meetings each employee has once a year.

According to the group manager, there is currently a plan to change the introduction program, since the material today is very concise. They have a checklist they go through for every new employee and since it is brief and requires experience, it is hard for anyone else than the group manager to perform it. The group manager also talks about the information board at the docking bay, the five minute meeting in the morning and the department meetings which are held every second week. The meetings are held every second Thursday and lasts about an hour and the employees that do not attend the meetings get the information sent to them by e-mail. On the notice board, information that has been sent out in e-mails, or other things that are relevant, is put up. This could, for example, mean information about DDs and WDs. The employees are told about the notice board but it is their responsibility to read them. Also, there is a notice board, in the personnel entrance, which reports the amount of weekly WDs. When it comes to the morning meeting, the point of having them is to provide information that is related to the morning's work. Other information is sent out in the e-mails. This means that both DDs and WDs can be mentioned if the department has had problems with them lately.

#### 6.1.1.1.2 Dep. Y

When it comes to the awareness of handling damaged goods and the knowledge about reporting them, the group manager answered: "The employees are aware about the basics of DDs and WDs, they have been told the goal to keep WDs at 0,27% but everyone probably does not know what this means. And the ones that have been employed for a longer time know more about it" (personal communication, group manager Y, 2008-11-17) Dep. Y also informs the employees about DDs and WDs in their weekly meetings and as well in their

departmental meetings. In Dep. Y, it is also an important part of the introduction to learn how to handle DDs and WDs. They also talk about it in their two minute morning meeting and if there are employees that miss the departmental meeting, they get weekly updates about what is new.

The introduction at Dep. Y is currently being revised. Earlier, there has not been any program for it, but now they are in the process of creating one. For the moment, it starts out with a tour of the warehouse where the theoretical parts are explained. After this, the employee has two days where he or she works alongside an experienced employee and learns how the practical parts work. During these two days, the new employee is not expected to perform the same work tasks as the other employees. However, there are always things that can be improved according to the group manager; one thing is for example to introduce a follow-up 3-4 weeks after the introduction to see if the employees have learned the theoretical parts.

When it comes to the fact of how damaged a good must be in order to qualify as a WD, the group manager says that it is enough that the box is broken, even though the good itself is still intact. In Dep. Y, there is also an extra employee, whose work task is to walk around the warehouse and repair broken boxes. [Connexi is a company offering simple jobs to people comprised by LSS. LSS is the Swedish Law on Special Support.] In order for a DD to be accepted, it has to be reported straight away, preferably in the truck. If it is on the quay, that is acceptable as well. The employees of Dep. Y are aware of this.

If the department manages to decrease WDs further, the money that they save would mean a larger budget for the department.

#### **6.1.1.2 Flaws in Working Environment**

The second hypothesis the authors had was that the reason for the high WDs is due to flaws in the working environment, such as, for example, space shortage. This was mainly investigated through visits to both Dep. X and Dep. Y, but a few questions were also directed to the managers concerning this hypothesis. These can be found in appendix 3-5.

##### **6.1.1.2.1 Dep. X**

The group manager mentions the fact that since Dep. Y has a smaller CS department, they put larger products in the external warehouse and therefore run a lower risk of damaging them. It is important to keep the right goods in the in-store warehouse and Dep. X moves a lot of articles between the CS and external warehouse depending on how much they sell. The aim is to serve the customers in the best way by having the high-selling products in CS.

The group manager then claims that in the external warehouse it is very clean and that they have very few WDs there. At this point, however, the logistics manager disagrees and he thinks there are a lot of WDs there, even though that should not be the case since no customers are allowed in that area.

##### **6.1.1.2.2 Dep. Y**

The CS department at Dep. Y is only half the size of the CS department at Dep. X. Still, the sizes of the external warehouses of the departments are basically the same. In Dep. Y, the group manager feels like they have a shortage of space in the CS; they cannot store as many articles there as they want to. One thing that the group manager believed could be a

reason for why Dep. X carries larger WDs is the fact that they use larger forklifts to move around the products. These are faster but they also make it easier to break goods. The articles kept in the CS department are those that sell three or more per week.

There are no certain days when WDs are higher, except that an increase is noticed in the summer when a lot of the ordinary personnel are on vacation.

Also, Dep. Y has introduced specific work tasks and responsibility areas. For example, this means that one person has the ultimate responsibility to report DDs and WDs.

### **6.1.1.3 Flaws in Motivation**

The third hypothesis to explain the high level of WDs that Dep. X is carrying is that perhaps the employees do not feel motivated enough. This theory was investigated partly through the interviews with managers and employees. The questions related to this hypothesis can be found in appendix 3-5.

#### **6.1.1.3.1 Dep. X**

The logistics manager mentions that the employees are responsible for their own development; it says so in their HR strategy. He also speaks about the fact that they have a flat organization and that they try to work with motivation in all areas and try to have regular performance reviews and use the employees' ideas for improvements. Also they try to have regular activities involving the logistics department as well as the other departments.

The group manager talks about the possibility of organizing some sort of competition in order to decrease WDs. A couple of years ago they did a similar thing when they had a problem with the safety of pallets being lifted into the air. After a month they had put double ties around all the pallets that were lifted into the air, and they bought the employees pizza. However, he only sees this as an option if other more conventional methods will fail.

The logistics manager is skeptic when it comes to using the carrot and stick theory. He mentions that giving the employees a reward after completing a task will only mean you have to give something better the next time to achieve the same result, and something even better the time after that. And if you are to punish your employees you have to be very consistent; the slightest mistake will undermine you totally. The group manager is doubtful when it comes to this technique as well even though he earlier suggested using a carrot as a means of solving a problem.

#### **6.1.1.3.2 Dep. Y**

As a tool in motivating their employees, Dep. Y tries to communicate the goals for the day during the morning meeting. They also try to motivate the employees while they work, encourage them and give them positive feedback.

The group manager does not feel like it is a good idea to use the carrot theory as a motivational tool; rewards should be spontaneous, like for example giving the employees candy or fruit after having finished a day's work.

### **6.1.1.4 Flaws Concerning Customers**

The last hypothesis that the authors had was that the high levels of WDs was caused by customers. This will mostly be investigated through the investigation of damage levels pre-

sented later in this chapter, but a few questions in the interviews were also related to this hypothesis. These can be found in appendix 3-5.

#### 6.1.1.4.1 Dep. X

The logistics manager believes that customers have a big impact when it comes to damaged goods, but that it is mostly indirect. For example, if the customer sees a broken box, he or she will move it in order to take the intact box lying underneath. In doing this there is a risk that the customer breaks a third good since many of the boxes are very heavy and hard to move.

#### 6.1.1.4.2 Dep. Y

When it comes to the effect customers have on damaged goods, the group manager believes that it is large, especially on certain goods. Although, these damages happen mostly because there are already damaged goods in the warehouse. For example a customer wants to be sure if the good is the right color and the box is already a bit broken. He or she then opens it further to be sure and then picks the box underneath that is intact.

Although, Dep. Y also carries damages in the external warehouse where they are not any customers and no WDs should occur. This could be because of that the employees do not pay attention or that they fail to report DDs on time.

### 6.1.2 Interviews with Employees

A total of six interviews were conducted with employees; three at Dep. X and three at Dep. Y. These were conducted with one full time employee that has been employed for at least ten years (E1 in Dep. X and E4 in Dep. Y), one part time employee that has been employed for 2-4 years (E2 in Dep. X and E5 in Dep. Y) and one employee that is recently hired (E3 in Dep. X and E6 in Dep. Y). The answers below are divided into Dep. X and Dep. Y. The interviews along with answers are found in appendix 6 for the employees in Dep. X and appendix 7 for the employees in Dep. Y.

#### 6.1.2.1 Flaws in Communicating Knowledge

This hypothesis was also considered in the interviews with the employees in order to try to establish whether or not the employees had enough information about the job they are expected to do. Questions related to this hypothesis can be found in appendices 6-7.

##### 6.1.2.1.1 Dep. X

When talking about their work tasks, both E3 and E2 answers that work tasks are to operate the forklift and refill goods. Only E1 answers that one of the work tasks is to keep the warehouse clean and in order. When it comes to when the meaning of DDs and WDs was explained to the employees, E1 started before this term existed. E2 had it explained to him at the introduction but E3 did not; E3 had to learn about it from colleagues while working. Only E1 is aware of when you need to report a DD in order for it to be accepted at the supplier. E2 knows how to make a report but is a bit unsure of when the pictures need to be taken. E3 does not have any idea when you have to report a DD before it turns up as a WD.

##### 6.1.2.1.2 Dep. Y



When describing their work tasks, all three employees answer that one of their tasks is to keep the warehouse clean and orderly. Additionally, the work tasks differ a bit, due to the fact that they have personal responsibility areas; either DDs or WDs. Both E6 and E5 got DDs and WDs explained to them thoroughly when they started, and they were also shown how to handle them in practice. E4 has been working there for 28 years and when E4 started, the terms DDs and WDs did not exist. All of them are quite aware of when a DD has to be reported in order to be acceptable, especially E6.

#### **6.1.2.2 Flaws in Working Environment**

This hypothesis was also to some extent investigated in the interviews with the employees. Questions related to this hypothesis can be found in appendices 6-7.

##### **6.1.2.2.1 Dep. X**

E1 claims that they do not have enough time to do optional work every day; E1 would like more time to report damaged goods and clean up the shelves. E2 thinks that new employees might have problems doing their tasks in the appointed time frame and E3 mentions that there sometimes is no time to remove damaged goods.

Concerning the work load, E1 and E3 answers that the work load is not really too large but there are certain days that are tougher than others. E2 does not think it is a problem as long as everyone does what they are supposed to.

##### **6.1.2.2.2 Dep. Y**

When the employees are asked whether or not there are any work tasks that they do not find time for, the answers are pretty similar. Of course there are days when there is a big work load but most often you have time to finish your tasks. E4 talks about the importance of that everyone contributes and does their part. E4 also mentions that the work load used to be a problem but ever since the department appointed specific work tasks and responsibility areas, it has become much better. E6 also mentions that reporting DDs and WDs does not have top priority which means that this could be missed out on busy days.

None of the employees believe that they have too much work to do, even though of course some days, like holidays, could be a bit tough.

#### **6.1.2.3 Flaws in Motivation**

Two questions in the employees' interviews can be linked to this hypothesis. The related questions can be found in appendices 6-7.

##### **6.1.2.3.1 Dep. X**

Both E1 and E3 answer that if they do not report a damaged good it is because of shortage of time. E2 says that "between the hours 5 am and 10 am, lists and delivery must be taken care of. [...] If I can make time for other things, like reporting damages, I do that as well (personal communication, E2, 2008-10-23). E2 also talks about that it is a split responsibility between the personnel at the logistics department and the personnel at the CS department to report damaged goods. The CS personnel arrive at nine o'clock and E2 thinks it is their responsibility then to check the shelves for broken goods.

Both E1 and E3 claim that they report a damaged good if they see one in the same shelf as they are currently refilling, but if it is a couple of rows away they probably will not report it.

#### 6.1.2.3.2 Dep. Y

If the employees do not remove a damaged good that they see in the warehouse it is because of the time pressure or that they prioritize other work tasks. E5 reports a damaged good even if it is a couple of rows away from the shelf that E5 is currently refilling. E6 mentions the importance of reporting a damaged good if you see one, because if you do not, it will only mean more work for the department in the long run.

#### 6.1.2.4 Flaws Concerning Customers

This hypothesis was not at all dealt with during the interviews with the employees.

## 6.2 Survey

In order to get a wider range of data, a survey was conducted in addition to the interviews. A total of 22 surveys were sent out to Dep. X and 11 to Dep. Y. In Dep. X, 11 of these were directed towards FL operators, 5 were directed towards CS personnel and 6 were directed towards PJ personnel. In Dep. Y 7 were directed towards FL personnel, 2 towards PJ personnel and 2 towards CS personnel. The answers of the surveys will be divided into the four areas presented in the problem discussion and then further into Dep. X and Dep. Y. A more thorough explanation of the surveys, and tables to record the results, can be found in appendices 8-9.

### 6.2.1 Flaws in Communicating Knowledge

In the survey, six questions dealt with the problem of communication. These can be found in appendices 8-9.

#### 6.2.1.1 Dep. X

When it comes to the awareness of DDs among the personnel, 14 out of 22 knew what it meant and 10 out of 22 understood the meaning of it. Regarding WDs, 17 out of 22 knew what it meant and 15 out of 22 understood the meaning of it. When asked about whose responsibility it is to remove damaged goods, 17 out of 22 answered correctly if the damaged good came in the delivery, 7 out of 22 answered correctly if the damaged good was in the store, 15 out of 22 answered correctly when the damaged good was in the CS area and 12 out of 15 answered correctly if the damaged good was in the external warehouse (This last case in the question did not concern the CS personnel).

Regarding whether or not the warehouse has an insurance that covers damaged goods, 4 out of 22 answered correctly that it has not. When it came to the e-mail sent out each week, 10 out of 11 answered that they read it (CS and PJ personnel were not included in this question, since the email only is sent out to FL operators). 6 out of 17 answered that they read the notice board by the docking bay (this question did not concern CS personnel).

#### 6.2.1.2 Dep. Y

Regarding the awareness of DDs in Dep. Y, 10 out of 11 respondents were aware of the term and 8 out of 11 understood the meaning of it. Then with WDs, 10 out of 11 of the respondents were aware of the term while 7 out of 11 understood the meaning of it. When asked about the responsibility to remove damaged goods, all 11 respondents answered correctly if the damaged good came in the delivery. 6 out of 11 answered correctly if the damaged good was in the store, 9 out of 11 answered correctly if the damaged good was in the

CS area and 9 out of 9 answered correctly if the damaged good was in the external warehouse (this question did not concern CS personnel).

As for the fact whether or not the warehouse had an insurance to cover damaged goods, 3 out of 11 respondents answered correctly that it does not. 5 out of 9 respondents answered that they read the information notice board (this question did not concern the CS personnel). In Dep. Y, no weekly e-mail is sent out and therefore this question was cut from the surveys conducted at Dep. Y.

## **6.2.2 Flaws in Working Environment**

In the survey, one question concerned the problem concerning the work environment. This question can be found in appendices 8-9.

### **6.2.2.1 Dep. X**

In Dep. X, 12 out of 22 employees felt like they have too much work to do.

### **6.2.2.2 Dep. Y**

In Dep. Y, 2 out of 11 respondents answered that they felt they had too much work to do.

## **6.2.3 Flaws in Motivation**

One question in the survey was focused on motivation problems. This can be found in appendices 8-9.

### **6.2.3.1 Dep. X**

7 out of 22 employees answered that they were not aware of how money saved from reducing the cost of DDs and WDs would be used.

### **6.2.3.2 Dep. Y**

In Dep. Y, 6 out of 11 respondents answered that they were not aware of how money saved from reducing the costs of DDs and WDs would be used.

## **6.2.4 Flaws Concerning Customers**

This hypothesis was not at all dealt with in the surveys.

## **6.3 Investigation of 5 Minute Meeting at 5 a.m.**

Early in the morning while the whole city is still asleep the authors bravely defy the laws of nature for the sake of the thesis. Along with six tired workers and the group manager, the researchers stand at the area where the freight is about to arrive in just a minute. The group manager, stands in front of the notice board making a short note about the amount of incoming freight before he addresses the workers in a tired voice. He mentions that this morning, three students from the faculty are here, to make some observations for the writing of a thesis about the department. Further, the manager briefly mentions, in a low voice, the topic of the thesis; to write about WDs, and that the department aims at halving the cost of them before the end of this year. The workers nod at this extra information and do not seem to care about the authors, but just wanted today's tasks so they could get started.

Then, the manager tells them that today's delivery is 240 cubic meters and that they should be done before 10 am, because "240 cubic meters is not much" (group manager X, personal communication, 2008-10-16) and that this should be an easy day. Beside the delivery load, some workers are given task lists about which empty shelves to refill out in the store. The manager says that these should be taken care of in three hours, by breakfast time. Then, with some encouraging words; "let's work hard now, guys" (group manager X, personal communication, 2008-10-16), he sends them off to work. After this, the employees get up on their forklifts and start to work. Even though the workload is light compared to many other days, the workers seem to be feeling the pressure and after a few minutes one of them runs the forklift into a lamp device hanging from the ceiling. The manager sees this, however he does not seem to get very surprised but just states that "oh, come on, that one has just been fixed" (group manager X, personal communication, 2008-10-16).

## **6.4 Investigation of Damage Levels**

Tables 4 and 5 below present the findings of the investigation of damage levels at Dep. X. Table 6 presents the findings of the investigation of damage levels at Dep. Y. The total findings can be found in appendix 10 for Dep. X, and appendix 11 for Dep. Y.

The results were divided into messy areas, minor damages and large damages. To qualify as a messy area, the area must look unacceptably untidy and give a bad impression. Minor damages are, for instance, half-open or broken packages, meaning the product could be sold if fixed. Large damages are broken products, impossible to sell as they cannot be restored.

As mentioned, the investigation was conducted both in the store area and in the CS area. The area as well as time of the investigation is noted in the columns of the tables below.

### **6.4.1 Dep. X**

As mentioned earlier, at Dep. X, the researchers performed the investigation at three occasions; 2 p.m., and 7 p.m. one day and 10 a.m. the following day.

#### **6.4.1.1 General Observation of Warehouse X**

During the research that was performed at Warehouse X, the researchers went for a general observational stroll through the warehouse, where they noted two things worth mentioning. First, several of the damages noted at 2 p.m. had become more severe at 7 p.m. Second, one of the employees at the CS area picked up an empty box and just threw it among the shelves.

#### **6.4.1.2 Day 1**

This text explains Table 4 below.

The investigation at Warehouse X was started 2008-10-09, at 2 p.m. when a total of 59 damages were spotted at store area; 18 messy areas, 39 minor damages and 2 large damages. A total of 55 products were spotted at the CS area; 4 messy areas, 50 minor damages and 1 large damage. This totals 114 damages. At the following two visits, the researchers planned to follow up the same 114 damages to see if they were in the same condition or recovered.

The next visit at Warehouse X took place later on the same day; at 7 pm. Out of the previously detected 59 damages in the store area, only 9 were recovered. The rest, 50 damages, were in the same condition; 11 messy areas, 38 minor damages and 1 large damage. The situation at the CS area was similar as many of the products were at the same condition still. Only 1 out of 55 products were recovered. 4 messy areas, 49 minor damages and 1 large damage remained.

<b><i>Date of test</i></b> <b><i>2008-10-09</i></b>	<b><i><u>Store area at</u></i></b> <b><i><u>2 pm</u></i></b>	<b><i><u>Store area at</u></i></b> <b><i><u>7 pm</u></i></b>	<b><i><u>CS area at 2</u></i></b> <b><i><u>pm</u></i></b>	<b><i><u>CS area at 7</u></i></b> <b><i><u>pm</u></i></b>
<b><i>Messy areas</i></b>	<b>18 products</b>	<b>11 products</b>	<b>4 products</b>	<b>4 products</b>
<b><i>Minor damages</i></b>	<b>39 products</b>	<b>38 products</b>	<b>50 products</b>	<b>49 products</b>
<b><i>Large damages</i></b>	<b>2 products</b>	<b>1 products</b>	<b>1 products</b>	<b>1 products</b>
<b><i>Total</i></b>	<b>59</b>	<b>50</b>	<b>55</b>	<b>54</b>

Table 4 Damage Levels at Dep. X, Day 1. (Own Table.)

#### 6.4.1.3 Day 2

This text explains Table 5 below.

The final visit to Dep. X, in this investigation, took place at 10 a.m. the following day; 2008-10-10. According to the previous visit at 7 p.m., 2008-10-10, there were 50 damages in the store area and 54 in the CS area to investigate. 37 out of the 50 damages in the store area were at the same condition; 7 messy areas, 29 minor and 1 large damage, while 13 were recovered. 49 out of 54 products at the CS area were also in the same condition; 4 messy areas, 44 minor damages and 1 large damage. 5 damages were thus recovered.

In total, only 28 out of 114 products (10 at the second visit and 18 at the second visit) were recovered during the entire investigation at Warehouse X.

<b><i>Date of test</i></b> <b><i>2008-10-10</i></b>	<b><i><u>Store area at 7</u></i></b> <b><i><u>pm</u></i></b> <b><i><u>The day before</u></i></b>	<b><i><u>Store area</u></i></b> <b><i><u>at 10 am</u></i></b>	<b><i><u>CS area at 7</u></i></b> <b><i><u>pm</u></i></b> <b><i><u>The day before</u></i></b>	<b><i><u>CS area at</u></i></b> <b><i><u>10 am</u></i></b>
<b><i>Messy areas</i></b>	<b>11 products</b>	<b>7 products</b>	<b>4 products</b>	<b>4 products</b>
<b><i>Minor damages</i></b>	<b>38 products</b>	<b>29 products</b>	<b>49 products</b>	<b>44 products</b>
<b><i>Large damages</i></b>	<b>1 products</b>	<b>1 products</b>	<b>1 products</b>	<b>1 products</b>

<b>Total</b>	<b>50</b>	<b>37</b>	<b>54</b>	<b>49</b>
--------------	-----------	-----------	-----------	-----------

Table 5 Damage Levels at Dep. X, Day 2. (Own Table.)

## 6.4.2 Dep. Y

As mentioned earlier, in contrast to Dep. Y, at Dep. Y, the researchers only performed these investigations twice; at 10 a.m. and 4 p.m. the same day. The researchers could not follow up the investigation at Warehouse Y the next day due to resource and geographical issues.

### 6.4.2.1 General Observation of Warehouse Y

During the research that was performed at Warehouse Y, the researchers went for a general observational stroll through the warehouse, and noticed that it was in a better condition, compared to the cleanliness and freshness of Warehouse X.

#### 6.4.2.2 Day 1

This text explains Table 6 below.

The first investigation of Warehouse Y took place 2008-11-06, at 10 a.m. Only 21 products were detected in the store area; 10 messy areas, 6 minor damages and 5 large damages. The spotted number of items at the CS area was similar; 17 products. Out of these, 9 were messy areas, 5 were minor damages and 3 were large damages. The second visit to Warehouse Y took place later on that day. At 4 p.m., 17 out of 21 damages were in the same condition in the store area and at the CS area, this number was 15. Only 6 out of 38 products were recovered at Warehouse Y.

<b><i>Date of test</i></b> <b><i>2008-11-06</i></b>	<b><i>Store area at</i></b> <b><i>10 am</i></b>	<b><i>Store area</i></b> <b><i>at 4 pm</i></b>	<b><i>CS area at 10</i></b> <b><i>pm</i></b>	<b><i>CS area at 4</i></b> <b><i>pm</i></b>
<b><i>Messy areas</i></b>	<b>10 products</b>	<b>7 products</b>	<b>9products</b>	<b>8 products</b>
<b><i>Minor damages</i></b>	<b>6 products</b>	<b>6 products</b>	<b>5 products</b>	<b>4 products</b>
<b><i>Large damages</i></b>	<b>5 products</b>	<b>4 products</b>	<b>3 products</b>	<b>3 products</b>
<b>Total</b>	<b>21</b>	<b>17</b>	<b>17</b>	<b>15</b>

Table 6 Damage Levels at Dep. Y, Day 1. (Own Table.)

### **6.4.3 Comparison Between CS and External Warehouse**

The authors also visited the external warehouses at both Dep. X and Dep. Y. As already mentioned by the logistic manager at Dep. X they carried a lot of damages also in the external warehouse, although not as many as in the CS area. This was the same in Dep. Y where there also were a few WDs at the external warehouse but in both cases it was related to amount of damages they carried totally. Therefore Dep. X carried more damages in their external warehouse than Dep. Y.

## **6.5 DD Reporting- Comparison of Dep. X and Dep. Y**

At the meeting at the DC, the researcher found out some important facts about DD reporting technique, which is presented below. Also, the numbers of reported DDs from Dep. X and Dep. Y are presented below.

### **6.5.1 DD Reporting Procedures**

In order for the warehouses to get refunds for the DDs they report, some criteria must be met concerning the reporting. The DC receiving the refund demand checks if these criteria are met by the reporting warehouses.

Employees unloading the trucks at the warehouses must go through certain procedures when detecting a DD. This reporting consists of filling out the damage form and taking pictures of the damage. The damage form must be filled out in accordance with the description in section 2.4 in this thesis. Also, whilst the goods are still in the truck, at least 2 relevant photos, from two different angles, of the damaged good/s must be taken. If this is not possible, because for instance the damage is first spotted at the quay, then the photos can be taken there. If, for instance, a hole in the trailer curtain has caused water damage, pictures must be taken on the source, in this case the hole in the trailer curtain, if it is visible.

The employee unloading the truck must also make a note of the damage on the delivery note (consignment note) and sign it. The driver must be asked for his signature to confirm this on the delivery note. If the driver refuses, a notice of that must be made on the delivery note. The delivery note with the two photos must be given to the co-worker responsible for reporting DDs.

Refund is only given if all relevant information has been filled out in the damage report and on the delivery note and photos are enclosed in the report. If any documentation is unclear, incomplete or late, the DC has the right to refuse the claim. The damage report must be forwarded as soon as possible because the responsible party must be held responsible within 24 hours. Last, but not least, no damage credits will be refunded if the total amount of damaged goods from one load, that is the daily delivery, is less than 300 Euros.

#### **6.5.1.1 Why Report?**

Even if the above requirements are not fulfilled, it is important to report all the DDs, because in the long run the responsible parties can see and detect patterns that cause the DDs. Then, they can take actions, i.e. talk to drivers, inform the suppliers etc.

### 6.5.2 Numbers of Reported DDs at Dep. X and Dep. Y

The numbers of reported DDs at Dep. X and Dep. Y, during the period September 2007 through September 2008, are compiled in Table 7 below. The complete figures are found in appendix 12 for both Dep. X and Dep. Y. Also, the numbers are supplemented by their percentage proportions below. To understand the table, some explanations of concepts are presented first:

“Picture/ Document”: The picture/pictures is/are taken wrong, or no pictures exist, or the document is not correctly filled out, so no refund is given.

“Wrong”: Major fault in the reporting, so no refund is given.

“Internal Delivery”: Getting back money (Approved DD)

“Below Limit”: below the stated limit of 300 Euros, so no refund is given.

September 2007 through September 2008	Dep. X	% of total	Dep. Y	% of total
Total number of reported DDs	543	100	162	100
“Picture/ Docu- ment”	91	16.7	26	16.0
“Wrong”	3	0.55	2	1.20
“Internal Delivery”	61	11.2	20	12.3
“Below Limit”	389	71.5	112	69.1

Table 7 DD Reports From Dep. X and Dep. Y. (Own Table.)



## 7 Analysis; Reflection on Identified Problems

---

*A connection between the theoretical background and the empirical findings will be made in this chapter. The analysis will present the differences between the two departments according to the surveys, interviews and the meetings that were carried out. Personal ideas and reflections that can contribute to the value of the analysis will also be included in this part.*

---

### 7.1 Analysis of Pre- Study Findings

The pre-study of this thesis resulted in some findings on how Dep. X should operate. After having conducted the research, however, the researchers have found that certain of these standards and procedures are not followed. First, the introduction of new employees does, according to procedures, consist of a 4-day program covering all security issues, garbage sorting, and rules and routines for all tasks at the department. In reality, the group manager handles the introduction on a couple of hours. Second, the checklist that should be ticked at the introduction is not followed; the co-author of this thesis who is employed at Dep. X claims that approximately half of the notes on the checklist are left out.

### 7.2 Comparison of Dep. X and Dep. Y; Interviews with Logistics Manager, Group Manager and Employees

The interviews conducted with employees and managers have resulted in findings that suggest that Dep. X and Dep. Y operate in very differing ways. These findings will be analyzed in this section. For simplicity's sake, the authors divide the analysis into the hypothesized problem areas below.

#### 7.2.1 Flaws in Communicating Knowledge

Concerning this hypothesis, one discloses major differences between Dep. X and Dep. Y, first of all regarding the introduction of new employees. This works in two very different ways at the departments; from a three hour theoretical briefing in Dep. X, to a total 2-3 days both theoretical and practical introduction at Dep. Y. During the interview with the group manager at Dep. X, the authors got the initial feeling that the introduction was done in a proper way with a checklist and an introduction program that was to be followed up. This conception changed after the interviews with the employees and the visit to Dep. Y. The introduction program is set up on four days, but in reality it takes about three hours. Even though the introduction procedure is very new and still being revised at Dep. Y, the employees there are more aware of when and how DDs have to be reported and they consider it their responsibility to keep the warehouse clean to a greater extent than the employees of Dep. X.

The managers at Dep. Y ponder improving their introduction by doing a follow-up 3-4 weeks after the introduction to see if the employees have learned the theoretical parts. The group manager at Dep. X does not indicate that such a solution is considered. However, he suggests that the checklist used at the introduction could be made more thorough, so others than himself can do the introductions. The management at Dep. Y seems to be better at communicating knowledge to the employees and also better at the overall communication with the workers. Apart from this, E2 mentioned in the interview that he believes information is very important and that it has to be made more accessible.

### 7.2.1.1 Shannon & Weaver's Communication Model

The group manager at Dep. X has a lot of information and tries to communicate it to the employees, however somewhere in this process, much of it is lost. In Shannon & Weaver's model, (explained thoroughly in section 5.3.1.1) the communication process is divided into different steps to help us identify where communication might have failed. We know that the intended message never reaches the receiving part in Dep. X, leaving two options. Either, the packaging of the message is inadequate (signal) or noise interferes in the interaction. The first alternative is very interesting to look closer into. We know that in Dep. X, much of the information is sent out by e-mail or put up on the notice board. We also know that Dep. Y to a larger extent uses communication channels where both the transmitter and the receiver are in the same room, hence are able to interact with each other. Communication that takes place without human interaction is much more likely to fail, or at least becomes altered so that the message gets another meaning for the receiver than what was intended. In communicating through these types of channels, it is very important that you express yourself clearly and are aware that the communication is more likely to fail than in a face- to- face situation. Therefore, the researchers believe that the communication flaw at Dep. X is the signal, if you think about communication in the way Shannon and Weaver do. This is illustrated by Figure 15 below. The group manager intends to communicate very well, since he realizes the importance of it, and the employees are craving for information from the manager, so they are receptive. However, somewhere in between, communication fails, indicating that the signal is too weak or noise interferes with it. Still, this only points in a problem direction. What is wrong, specifically, cannot be determined still. It might be that the communication media is inappropriate, as mentioned above. The researchers believe this to be the case, since the employees receive very much information in written form, and less verbal. However, it might also be the case that for instance working conditions are not appropriate for the morning meeting, because human beings are tired 5 a.m. in the morning and the employees are not very receptive to information they receive at that time. Also, the e-mail information might be inappropriate since the employees are to read it in their leisure time, so they might not be in the right mood mentally for information concerning their work.

Another thing that is important to take into account is that if you choose communication channels where messages only flow in one direction, the receiving part does not have the possibility to give feedback. If the receiver is not able to give feedback to the transmitter, the communication runs a higher risk of failing, thus creating a misunderstanding.

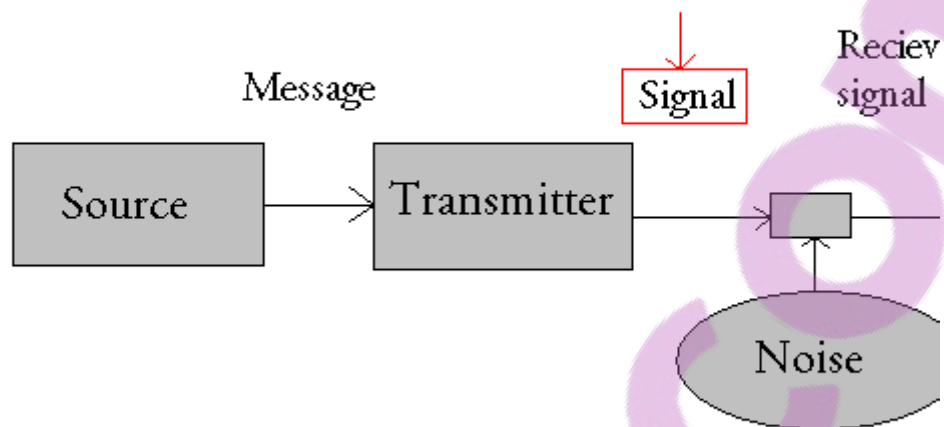


Figure 15 The Communication Issue at Dep. X.

#### 7.2.1.2 Internal Communication in Organizations

There is nothing that indicates that the formal communication differs significantly between the two departments. Since both are part of the same company, information such as pamphlets and internal newspaper sent out are the same. It could of course be smaller differences between them but this should not be enough to support the authors' hypothesis. Instead it is more likely that the difference is in the informal communication and as explained in section 5, the informal communication is very hard to control by the management. The authors could see a difference between the two group managers when it came to their view on problems and this could very well be something that has a negative effect on the informal communication and as well the motivation among the employees.

#### 7.2.2 Flaws in Working Environment

The logistics manager at Dep. X did not believe that there exists a shortage of space, especially not since they opened their external warehouse. However, the group manager, who spends more time in his daily work at the logistics department, considers space shortage to be one of the main issues resulting in WDs. This is why they continuously work with moving products between the CS department and the external warehouse and also between the shelves in the CS. In Dep. Y, the group manager felt that the CS was too small and that they would like to keep more products there. However, the size of the CS does not seem to be a reason that causes WDs, especially not since Warehouse Y has a smaller CS than Warehouse X, and still only Y meets the damage level targets. Instead, perhaps the attitude of the group manager at Dep. X influences the employees. If the manager has the attitude that the space is not enough to handle the goods safely and ensure no WDs occur, then how could the employees feel any other way? In short, the group manager seems to think that the problem with WDs is out of the workers' control, and perhaps this is why the workers do not pay enough attention to preventing WDs. Also, since the forklifts used at Dep. Y are smaller than those at Dep. X, this could result in higher damage frequencies at X.

The employees did not feel like they had too much work to do, and the answers were very similar in both departments. Workload does therefore not seem to be a factor resulting in higher levels of WDs.

### 7.2.3 Flaws in Motivation

The interviews did not indicate that deficient motivation among the employees is an issue. However, E6 said that he did not know how potentially saved damage money would be used, but the knowledge that it was of personal gain for him would have acted as a positive motivation tool. In Vroom's expectancy theory, (explained thoroughly in section 5) the total motivational force is made up of three different aspects; expectancy, instrumentality and valence. If an employee expects a reward (valence) for the work that is to be done, she is likely to do a better job. This implies that E6, if he had known the fact that money saved on DDs and WDs would be used at the department, would have had higher valence. This would have generated a higher total motivational force. This example is illustrated in Figure 16 below. The numbers on top of expectancy, instrumentality and valence; 0,7, 0,7, and 0,7, represent the original state, which are multiplied to a total motivational force of 0,343. The numbers at the bottom represent the state after an increase in valence, to 1,0, making the total motivational force 0,49 instead.

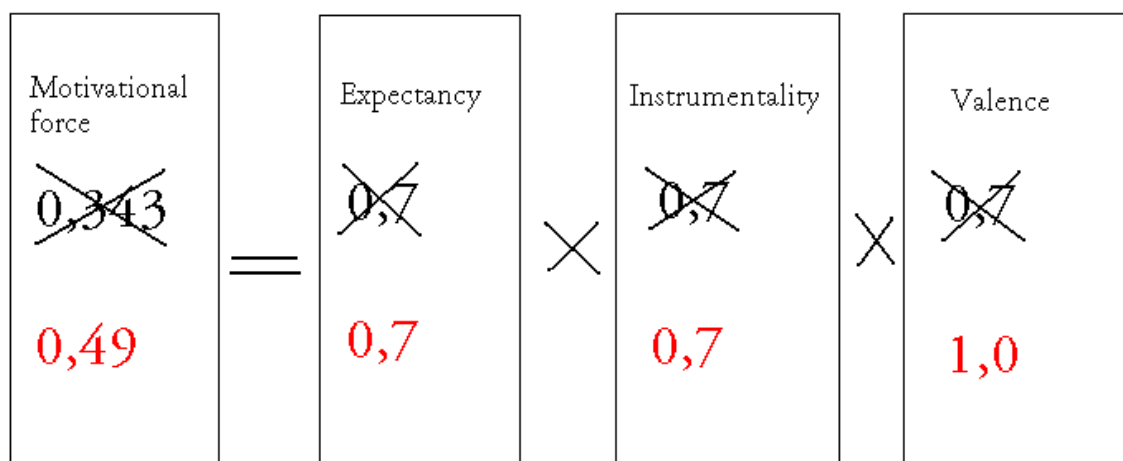


Figure 16 An Example of how Increased Valence Might Increase the Total Motivational Force.

There is also the aspect of the psychological contract of employment to consider. Since the introduction is very different between the two departments it may be so that employees at Dep. Y expect other conditions than the one at Dep. X. In having a clear and well working introduction the department decreases the risk of misunderstandings and minimizes the risk of unpleasant surprises among the employees. Meaning, a good intro can increase the motivation among the employees.

### 7.2.4 Flaws Concerning Customers

The managers of Dep. X and Dep. Y held similar opinions on the customer effect. In both departments, they considered it to be large. However, after they had been asked related questions, the managers came to the conclusion that this was an indirect effect. In other words, customers break goods mainly because there already are broken goods in the warehouse. This theorizing is in accordance with the Broken Windows theory, which was presented in section 5.2. The theory goes that the context we act or work in has a major effect on our behavior. If the warehouse is messy and contains plenty of WDs, customers will not

amend from their destructive patterns either. If they make even more of a mess, it will hardly show. The implication is that if the problem would be solved at an earlier stage, making sure there is a minimum of broken goods in the warehouse, the customer effect would become negligible.

## **7.3 Comparison of Dep. X and Dep. Y; Survey**

### **7.3.1 Flaws in Communicating Knowledge**

In Dep. X, most of the employees were aware of DDs and WDs. However, only 45% understood the meaning of DD and 68 % understood the meaning of WD. This result is however affected quite strongly by the PJ personnel where only one out of five answered correctly when it came to DDs. PJ personnel are not directly associated with the delivery in the morning and DD knowledge might not be of great importance for them. The general conclusion to be made from this is that the employees are quite aware of what DDs and WDs are and that they understand the meaning of it.

Regarding the fact of who is in charge of removing and reporting damaged goods, the data are ambiguous in Dep. X. If the product is in the store, many of the employees are uncertain or wrong about whose responsibility it is to remove the damaged good. None of the PJ or CS personnel were aware of who is responsible, but 64% of the FL personnel answered it correctly. The figures are better when you consider the CS area, the external warehouse and if a damaged good comes in the delivery. 81% of the FL operators are aware that it is their responsibility to report a damaged good if it arrives with the delivery and this finding is also backed up by the fact that Dep. X is among the better ones in the country at reporting DDs. Even if 68% of the employees are aware that it is their responsibility to remove damaged goods in the CS area, the authors spotted a significant amount of undetected WDs there during their investigation of damage levels. This indicates that the employees are aware of that they should remove them, but for some reason do not.

When it comes to whether or not the employees believe Dep. X has an insurance that covers damaged goods, only 18% answered correctly. However, many of them answered that there is a DD insurance. In reality, even though the department receives a full refund for DDs if reported correctly, this is not an insurance. It was not widely assumed, on the other hand, that there exists an insurance for WDs.

At Dep. X, the information notice board at the docking bay is read by 35% of the FL and PJ personnel which indicates that this channel of communication is quite inefficient. As for the e-mails, those were read by 91% of the approached employees (FL). This should therefore prove as a good channel for communicating with the employees.

Apart from this, only 32% of the employees at Dep. X are aware of how saved money from DDs and WDs would be used. Communicating this knowledge and making the employees more aware of the big picture could prove as an incentive for decreasing damage levels.

In Dep. Y, almost all of the respondents were aware of the terms DD and WD, although only 64% understood the meaning of WDs and 73% understood the meaning of DDs. The results were especially poor regarding PJ personnel where only one of the respondents was aware of the terms and none of them understood the meaning. PJ personnel are as mentioned above not associated with delivery but that the figure was the same on WDs should be noticed. Regarding the responsibility to remove damaged goods the answers were over-

all very good at Dep. Y. All respondents answered correctly if the damaged good came in the delivery and if it was at the external warehouse, 64% answered correctly if it was in the store and 82% answered correctly if it was in the CS area. This indicates that the employees at Dep. Y are well aware of their responsibilities and are keen on helping other areas than their own in order to keep the warehouse clean and in order.

Regarding the insurance, only 27% answered that there was none. However some of these answered, just as some employees at Dep. X, that it exists an insurance for goods damaged in the delivery. Even though the warehouse gets a full refund if the DD is reported correctly, this is not an insurance. That so many of the employees believe that there is an insurance could indicate that they might be reckless when handling certain goods. In Dep. Y, e-mails with information are not sent out to the employees and the question was therefore left out from the survey. And when it came to the information notice board on the docking bay, 55% answered that they read it, indicating that important information put up here may run the risk of never reaching many of the employees. 45% of the employees were aware of how money saved from DDs and WDs would be used. Here communication could be better but the number is still higher than what the authors had expected and better than the corresponding number in Dep. X.

If we start to compare the two departments we can see a big difference when it comes to the responsibility of reporting damaged goods. In Dep. Y many of the respondents answered that it is the one who detects the damage that is to report it or that all personnel in the warehouse are responsible of reporting damaged goods. This is also supported by the fact that Dep. Y had a lot less damaged goods lying around in the warehouse and that if the employees were more aware of their responsibility, it could give a positive effect on Dep. X.

Apart from this, the numbers do not differ dramatically between the two departments. Interesting to mention could be the fact that Dep. Y received slightly higher scores indicating that communication is more effective there than in Dep. X. Also, as the e-mail seems to be a successful communication channel in Dep. X, and Dep. Y does not use it, one might wonder why the employees are still more aware at Dep. Y.

### **7.3.2 Flaws in Working Environment**

When asked whether or not they felt like they had too much work to do, 55% of the employees at Dep. X said yes. This indicates that the work load could very well be a problem even though this contradicts the authors' conclusions from the interview. Furthermore, it can be established that among the CS personnel, 80% answered that they felt they had too much to do, while this number was only 33% among PJ personnel, indicating that PJ personnel might have more time for additional work tasks such as keeping the warehouse in order.

In Dep. Y, only 18% of the respondents answered that they felt they had too much to do. Of these, one was a FL and one was a CS personnel. Since only two CS personnel took part in the survey in Dep. Y this equals 50% of the respondents. It is hard to draw conclusions from this but with support from the survey at Dep. X it may very well be the case that CS personnel feel more stressed about having time for work tasks. The overall conclusion is also interesting since the attitude towards the workload differs a lot between the two departments, from 55% in Dep. X to only 18% in Dep. Y. Still, they have the same workforce and basically the same delivery. The only concrete reason for explaining this differ-

ence is the size of the CS area. If this is not the reason it is likely to be a psychological effect.

### **7.3.3 Flaws in Motivation**

In Dep. X, as mentioned above, only 32% of the employees are aware of how saved money in DDs and WDs are used. If more employees were aware of this, it could very well have a positive effect on their motivation. This had already been discussed in the analysis of the interviews. As the findings from the surveys point in the same direction, it gives more weight to the importance of communicating the big picture of cost savings to the employees.

In Dep. Y, 45% were aware of how saved money would be used; a small but still clear difference from Dep. X. This is another thing that emphasizes that Dep. Y is better at communicating with their employees than Dep. X.

### **7.3.4 Flaws Concerning Customers**

This hypothesis was not at all dealt with in the surveys.

## **7.4 Investigation of 5 Minute Meeting at 5 a.m.**

The authors were a bit disappointed with the meeting because they had got another understanding of it after the interview with the group manager.

### **7.4.1 Flaws in Communicating Knowledge**

During the 5 minute meeting, the authors did not hear anything being mentioned about the DDs and WDs. The only things that were said were the delivery amount coming in that morning and how many task lists each person would get. Also the workers have to be done with their workload before 10am. The authors believed that this meeting could be used in a better way to communicate important information to the employees. Many of them are paid by the hour and do not work every day, so this would be a good opportunity to fill them in on news and updates. As mentioned above in the analysis of the interviews, choosing a direct channel of communication lowers the risk of failed communication and misunderstanding, and this is another reason for why this meeting should be of importance when it comes to communicating information.

For example, the person responsible for the meeting could mention that they have to try and spot delivery damages and that they should try to keep the warehouse in a clean order. He should also bring up information that the group manager sent out by email to the workers, repeating the information in order to make it stick. The manager can repeat this procedure a couple of weeks, so that all of the employees are being informed not just by e-mail, but also through a communication channel where they are able to give feedback.

### **7.4.2 Flaws in Work Environment**

Another thing that the authors observed during the meeting and the short investigation was that empty pallets, trolleys and large products were lying around beside the pallet causing troubles for the FL when they are to refill shelves. This could easily be prevented if the CS personnel took care of it before they went home the day before. Also, one of the FL ma-

naged to break a lamp device that was hanging from the ceiling. The group manager did not seem to care about it and the authors believe it's because it's early in the morning and that they are working under time pressure. This lamp device has also been broken in the past indicating that the position for it might not be suitable.

### **7.4.3 Flaws in Motivation**

Another reason for this meeting, as the authors understood it, was to motivate the employees. This was not successful according to the authors. Of course, five o'clock in the morning is early and both the group manager and the employees are tired but still, the meeting could be used more efficiently when it comes to this aspect as well.

For example, the person responsible for the morning meeting should try to create a more positive atmosphere. Even though the authors never attended a morning meeting at Dep. Y, they were given another picture of it, both from the employees and the group manager. The emphasis was put more on encouraging the employees and highlighting the fact that they have done something good instead of pointing out the faults. They did not put unnecessary pressure on their employees, like talking about that they should be finished early today since it is a smaller workload.

### **7.4.4 Flaws Concerning Customers**

This hypothesis was not relevant during the morning meeting.

## **7.5 Investigation of Damage Levels**

The initial feeling the authors got when they first entered Dep. Y was that it looked a lot fresher than Dep. X. After completing the comparison of damage levels a great difference can also be seen between the two departments, especially when it comes to minor damages. In Dep. X, 30-40 minor damages were found in the store and 45-50 at the CS area. In comparison, Dep. Y only had 6 minor damages in the store and 4-5 damages in the CS area. The store areas are basically the same size but the CS at Dep. X is twice the size of the CS at Dep. Y and this could of course be of relevance. However, this alone is not enough to explain the huge difference between the two departments.

### **7.5.1 Flaws in Communicating Knowledge**

The difference between the departments was, as the reader could observe in the empirical section of this thesis, massive and this might to some extent be related to communicational flaws. A reason for why Dep. X carries a lot more WDs in the store and CS area could be that the employees are not aware of whose responsibility it is to remove them. This was however contradicted by the answers from the surveys, in which many of the employees were aware that it was their responsibility to remove damaged goods. Regarding this, it is more likely that the problem is related to motivation among the employees or the working environment.

### **7.5.2 Flaws in Working Environment**

As explained above, a reason for why Dep. X has extensively more WDs in their CS area could be that it is twice the size and therefore requires more personnel to keep it in order. This could very well have been a trigger but should not be enough to explain the huge dif-



ference that the authors noticed. In section 5, the broken window theory was explained. Briefly, it means that if an interior is messy, damages are much more likely to appear. If we apply this theory on Dep. X, a reason for that they carry a lot more WDs is because there already are broken goods and messy things in the store. This also corresponds with the impressions the authors had compared to Dep. Y. During one of their visits to Dep. X, the authors also observed an employee when he removed an empty box from the shelf. The employee walked a couple of meters and then threw the box at an empty pallet that stood in one of the shelves. These kinds of incidents could, according to the broken window theory, be avoided by keeping the warehouse clean. For example, an employee is much more likely to remove a broken good if the shelves and aisles around it were kept in a good order. Apart from this, Dep. Y has an extra employee, on vocational training, who walks around the warehouse and repairs broken boxes. In copying this idea, Dep. X would be able to have an extra employee solely focused on repairing broken boxes without incurring an additional cost for the warehouse. With support from the broken window theory this could give an extensive effect on WDs at Dep. X.

### **7.5.3 Flaws in Motivation**

Because Dep. X has a lot more WDs lying around the warehouse than Dep. Y, it equals a greater cost. As was explained in section 5, costs associated with poor quality can be divided into two different areas; controllable and resultant costs. At Dep. X, they are facing a lot of resultant costs, both internal (spotted in the warehouse) and external (spotted after the customer has purchased the good). These two types of costs are far greater than the controllable costs, and if the department could prevent the damages before they reach the shelves they would save a lot of money. This work needs to take place continuously and at Dep. Y, E4 mentions that he talks with the supplier regularly in order to improve packaging and avoid damages.

If the employees were aware of the fact that resultant costs generate much higher costs for the company than controllable costs, they would have a strong reason for working with preventing measures. This can also be linked to Vroom's expectancy theory (explained in section 5). If the employee is given the big picture and the benefits for the individuals are clear, he or she is likely to have a higher motivational force. In this case, it does not mean that the company increases the rewards; they only highlight benefits that have been hidden from the employees and in doing so creating a higher motivational force without having to increase the actual reward.

### **7.5.4 Flaws Concerning Customers**

When it comes to the impact that customers have on damaged goods, it was hard to make any conclusions at either of the departments. The authors did not notice any pattern that new damages occurred around already existing ones in any of the departments. However, the investigation was done in merely two days in Dep. X and one day in Dep. Y and this might have been too tight a timeframe to notice any changes. That there should be a difference between the departments when it comes to customer effect is unlikely if we do not consider the indirect effect explained above in the analysis of the interviews.

Regarding the comparison between the CS area and the external warehouse there was a slight difference at both departments. However there was still an extensive amount of WDs at the external warehouse at Dep. X, where customers do not have any access, indicating

that the customer effect on damaged goods was limited. Same thing were observed at Dep. Y with the difference that both the CS area and the external warehouse has less damages.

## 7.6 DD Reporting- Comparison of Dep. X and Dep. Y

The DD reports revealed that Dep. X was the better warehouse when it comes to reporting in damaged goods, with 543 cases while Dep. Y only reported 162 cases, if we only consider the amount of reports that was handed in. But this does not mean that Dep. X got back money for 543 cases; this is only the number for the amount of items that they have reported, and the same goes for Dep. Y. Most of the cases were rejected and the departments did not get any refund because of the below limit criteria, meaning that the reported items single or together for the current day did not reach a worth of 300 Euros. 389 of the 543 cases were below limit for Dep. X and 112 of the 163 cases were below limit for Dep. Y; 71,5% for Dep. X and 69,1% for Dep. Y. Another reason for not getting a refund was the poor quality of the pictures. If a picture of the entire document does not match the criteria set up by the Distribution Central, the departments does not get any refund. 91 of the 543 cases were identified as bad pictures/documents at Dep. X (16,7%), and the corresponding number was 26 of 162 at Dep. Y (16%). So how much did they get back? Dep. X got money for 61 (11,2%) cases and Dep. Y for 20 (12,3%) cases. It is important to mention that the delivered amount of products to both warehouses is approximately the same.

## 7.7 Summary of Analysis

After the analysis, the authors agreed on that the two major problems were flaws in communication and flaws in working environment. This is illustrated by figure 17 below. Comparing the figure with the one in section 3.1, where the major problem only was flaws in communication, one can see that the model has been modified to include the weight of flaws in working environment. This is illustrated by that flaws in communicating knowledge, as well as flaws in working environment are equally big boxes, and also bigger than flaws in motivation and flaws concerning customers, in the figure.

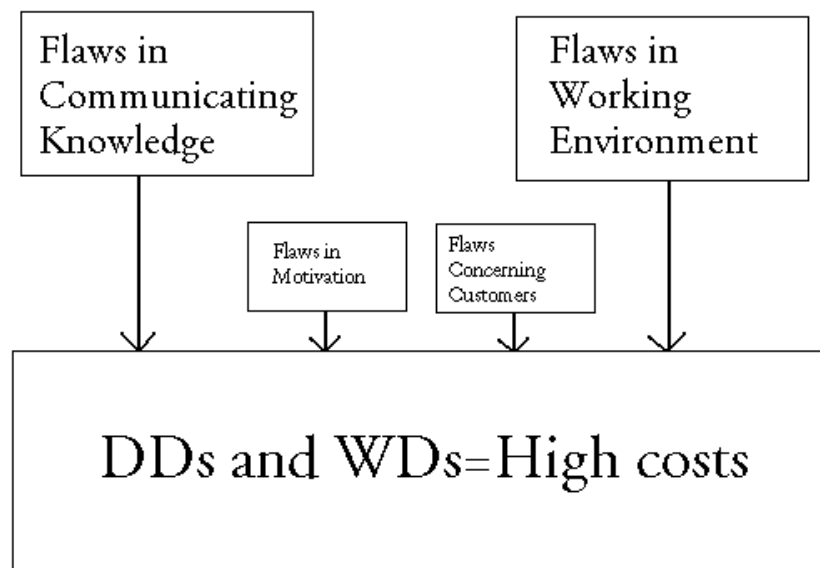


Figure 17. Analysis Model of the Problems at Dep. X.

## 8 Conclusion

---

*The purpose of the study that was formed in the third section of this thesis will be fulfilled below. Conclusions from the analysis will be made in this part, and both direct and indirect suggestions will be presented regarding the situation at Dep. X.*

---

The purpose as described in section 3.3 is accomplished, as the authors have detected the problem areas in Dep. X, and succeeded in suggesting improvements and to present a model (Figure 19 later in this chapter). Apart from this, the research questions, linked to the hypotheses, are dealt with below.

### 8.1 Conclusion of the Problem Areas

The conclusion will be divided into the four problem areas and each one of them will be evaluated to see whether it is likely to be one of the causes for the problem.

#### 8.1.1 Flaws in Communicating Knowledge

The authors noticed several flaws concerning the communication at Dep. X and this was also confirmed after their visit to Dep. Y. One of the major differences was the introduction which worked in two very different ways, from a three hour theoretical briefing at Dep. X to a 2-3 days theoretical and practical introduction at Dep. Y. This was also backed up by the fact that employees at Dep. Y was in general more aware of how to handle DDs and WDs. Apart from this the work tasks were made more clear at Dep. Y due to responsibility areas, the employees were aware of what they were supposed to do and did it. Another thing that also worked better at Dep. Y was the communication between the employees. For example the CS personnel helps the FL by cleaning up the CS area in the evening before they go home and this makes it easier for the FL to have time to finish their tasks when they arrive in the morning.

#### 8.1.2 Flaws in Working Environment

Regarding the work environment the authors found out at an early stage that the CS area at Dep. X was twice the size of Dep. Y and that it requires more effort to keep it in order. This could of course be a reason for why Dep. X carries more WDs but it should not alone explain the large difference. A simple thing such as the fact that Dep. Y has tape at the floor in the CS area in order to make it easier for the FL to know where the pallet is going to be placed makes a big difference. And if all pallets are placed aligned it looks cleaner and communicates a better message to the customers. Apart from this we also know that according to the broken window theory keeping the warehouse clean and in order will reduce the risk of WDs. A last point should also be mentioned, in Dep. Y there is an extra employee (vocational training) that walks around and repairs boxes. This enables them to keep the warehouse in a good order plus it does not inflict an additional cost for the company.

#### 8.1.3 Flaws in Motivation

There was no clear indication that employees at Dep. X were less motivated than employees at Dep. Y. However as explained above regarding the difference in communication between the two departments it indicates that employees at Dep. Y are more aware of the big picture. This means that the total reward (valence) perceived by them is higher, and linked to Vroom's expectation theory this generates a higher motivational force. So in solv-

ing the problem with communication Dep. X would also gain a higher motivation from their employees.

#### 8.1.4 Flaws Concerning Customers

Managers at both departments agree that customers has a large effect of damaged goods, however there is nothing that indicates that customers that visit Dep. X are more keen on breaking goods. Still the authors can establish that there is an indirect effect, as explained by the logistic manager and supported by the broken window theory. Because there already are broken goods in the store new damages is more likely to occur, caused by employees but also by customers. However if the managers simply decreases the amount of WDs in the store the customer effect would also decrease, thus this problem solving itself.

To conclude, Figure 18 below explains the situation and the underlying reasons for the high cost of DDs and WDs. Motivational flaws are an indirect cause of the communicational flaws and Customer flaws are an indirect cause of the working environment flaws. All these flaws contribute to DDs and WDs, resulting in high costs.

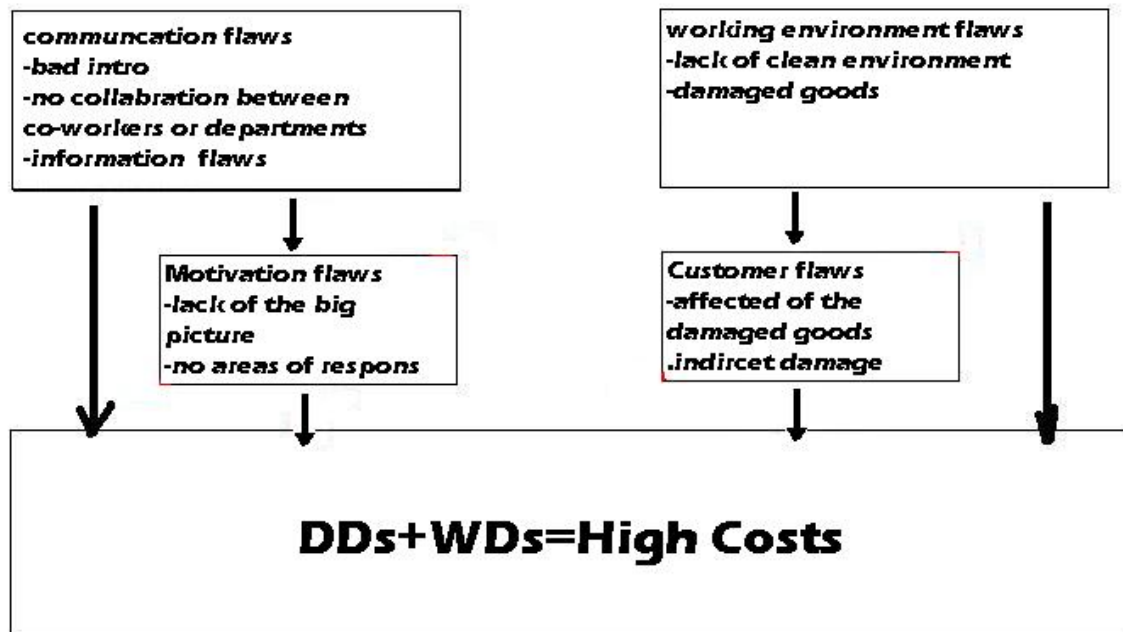


Figure 28 The Reasons for The High Level of WDs and DDs in Dep. X.

## 8.2 Suggestions for Improvements

The authors have listed some actions for improvements at Dep. X. These are related to the two problem areas, flaws in communicating knowledge and flaws in working environment. This is because the authors in their conclusion pointed out that these were the major causes for the problem.

### 8.2.1 Flaws in Communicating Knowledge

The authors have noticed that the checklist for the introduction is not followed as it supposed to be. This is a major loss and an important topic that in the end of the day results in

DDs and WDs. It is important that the new employees get a good introduction so the warehouse could benefit from that, both in the short and the long run. Overall, in the long run if employees get a better introduction it can decrease the amount of damaged goods and keep down the costs. The checklist that the warehouse has for their new employees is a very good tool to use, IF and WHEN they use it. It is important with a good intro but it is also important to review the intro in a near future, maybe after 3-4 months to ensure that the employees has learned the theoretical parts.

Besides a good theoretical and practical intro with sponsorship for the new employees, there should clear responsible areas as in Dep. Y. In doing this the employees will be aware of exactly what they are supposed to do and also what they are responsible for. Many of the employees at Dep. X that the authors got in touch with was not aware of whose responsibility it was to keep the warehouse clean and in a good condition.

The authors also noticed a lack of knowledge when it came to reporting delivery damages i.e. how to take a picture, information needed beside the photos, and most of the workers were uncertain about when a delivery damage became a warehouse damage. The mentioned knowledge is important to know for the workers if the warehouse wants to bring down the delivery- and warehouse damages and the costs associated with them. This kind of information should be mentioned during the intro and also repeated continuously.

Things that are mentioned in the beginning of the employment have a bigger impact on the worker then later on in their employment. When someone get used to do something in a certain way it is harder to stop doing that later on. For instance it is easier to teach a puppy than a full grown dog. This is another thing that makes the introduction very important.

DDs may be an area that concerns only the logistics department but WDs concerns everyone in the warehouse and because of that every single co-worker should be informed about WDs and learn how to handle these. The different departments in the warehouse should support each other and try to help each other for a better environment. It is easier to work if everyone pulls in the same direction and towards the same goals.

Besides the all above mentioned, it is important that the warehouse managers inform their employees about the situation and the different aspects. It is important to mention what would happen if they succeed in bringing down the costs i.e. what the money will be used for but also what will happen if they do not succeed in cutting the costs. It is not enough with just informing the logistics department but all the personnel in the warehouse, so everyone can help out in cutting the costs.

### 8.2.2 Information

The main tool informing the workers at the department X is done by email. It is a good tool to use when informing the workers, but there are some things that the managers have to remember;

- ✚ NO Long emails; do not write too long emails with important information, or too much information in the same email. This doesn't help, only confuses the reader so the reader does not want to read the email. Also when it is too much information it is easy that some of it is forgotten by the reader.
- ✚ NOT Too many emails; do not send too many emails, we live in an information era and there is too much information out there. Only email the most essential information to the workers.

- ✚ It is not enough with just emailing, but also important to bring up the information in the day to day work. Face to face communication is to prefer to avoid misunderstanding and enable feedback from the receiving part.

### **8.2.3 Flaws in Working Environment**

Many of the workers the authors came in touch with mentioned shortage of time when they got the question “what is the reason for you not reporting a damaged product?” Possible solutions for this variable are not many, but if everyone pulls in the same direction nothing is impossible. It is not possible to report ALL the damages during one working day, but if you and your co-workers report a few damages every day this would make a difference. Besides the importance of teamwork, clear goals and that everyone have responsible areas are possible solutions to the time shortage problem. Also to work in a cleaner environment will make a difference according to the already mentioned Broken Window theory.

### **8.2.4 Frequently Damaged Goods**

Check out products that are damaged often. Investigate the reasons why they get damaged so often and try to figure out what can be done. If possible show the co-workers how to handle those products and explain for them why they should be careful when handling those products.

### **8.2.5 Operation Clean the Warehouse**

The incentive for why to clean up the warehouse is because of the broken window theory mentioned in this study. There will be three stages during this operation; cleaning up, stabilization and improvement.

#### **8.2.5.1 STAGE 1; Cleaning Up**

It is important to clean up the whole warehouse, not only from garbage but also from damaged goods. Because there are several damaged products that are not shown in the reports; these are so called hidden damages. During this process the warehouse damage levels will increase, but this only helps the warehouse to see the real number and brings up the hidden old damages. The benefit of this stage will be that the warehouse gets the real balance of products that can be sold, more space for new products and the whole warehouse will be cleaner. A cleaner environment will also prevent customers from causing additional damages.

#### **8.2.5.2 STAGE 2; Stabilization**

During this stage the warehouse have to work with avoiding new damages. Useful rules and tools that can be used follows;

- Nothing should lay outside the pallet or on the warehouse floor, since the forklifts can damage those and the warehouse does not look clean and fresh.
- Nothing should lay in a sidelong position because the customers relate this to damaged goods or products with error.

- Overfilling shelves is not a good idea, easier for a customer to damage goods when trying to reach for the wanted product.
- Remove damaged goods right away, because a damaged product can damage an additional one, and we get the equation  $2 \times X$ , meaning two times the damaged products. The sooner one removes a damaged product, the sooner you prevent an additional damage from occurring.
- Thumb rule; if you see a damaged product or a box one arm length away, report it or bring it back with you. Do not focus only on the place you refill.
- ✓ Lines; one solution is to draw lines in the CS. area. It can be a helpful tool for the forklift driver when refilling the actual floor space. This will help to keep the warehouse in order and it looks nicer when every pallet is in line.
- ✓ Cardboard; to remove all the loose cardboards and trash.
- ✓ Use ropes; to keep long and instable things in place, such as curtain rods etc.
- ✓ Use baskets; for smaller goods
- ✓ Sticky tape; every forklift needs to have sticky tape so the forklift driver can use it when needed. i.e. fixing minor damages.
- ✓ Digital cam; needed when reporting delivery damages and it is very important that it is available.
- ✓ Problem areas; take care of the problem areas better.
- ✓ Recycle can; a can where the forklift drivers and co-workers can put not damaged but lost goods found in the warehouse before they get damaged.
- ✓ Keep it clean, it is easier to avoid damages in a clean setting.

### 8.2.5.3 STAGE 3; Improvement

When stage one and two are through, the results will be known and this will decrease the damages in the warehouse. Stage three is where the desired results will be shown and when the warehouse can improve towards better goals.

Figure 19 shows that motivational flaws and customer flaws will disappear if improvements are made in communication and working environment areas. This will, in turn, decrease DDs and WDs. When figure 18 and 19 are compared to each other, one can see the differences and the underlying reasons for the problems. Like mentioned before, if improvements are made in communication and working environment this will eliminate bad motivation and bad customer behavior.





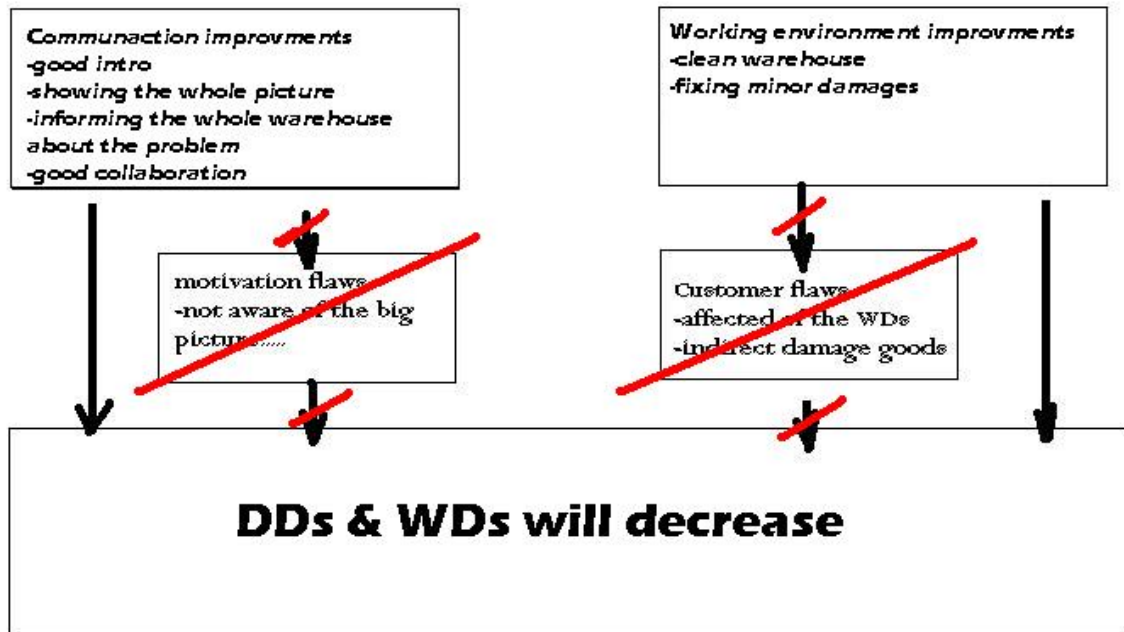


Figure 19 Improvements at Dep. X Which Will Result in WDs and DDs Decreasing.

### 8.3 Generalizations of Findings

The results found in this investigation are strictly related to the case at hand. Therefore, it means that the results and conclusions are specific and might not be applicable to other companies. However, the research structure used in this thesis and the problem areas discussed include factors that are relevant in many different companies and industries. This is particularly relevant when it comes to the areas communication, motivation and working environment. The relationship between communication and motivation is something that concerns all companies in society. Looking closer into communicational flaws, identifying and improving them, will probably improve motivational issues in the process elsewhere as well. However, the outcome may not be a decrease of damage costs, as in this logistics department, but it may concern another cost or another issue. The last problem area, concerning customers, might however be of limited interest to other companies since in the chosen one, customers have the possibility of moving around large goods and are therefore more likely to cause damages.

A large part of the study has focused on the broken window theory, and this can be applied in many different situations, from different companies up to a level that concerns the society at large. Even though this theory is not discovered by the authors it is presented and applied in a way showing that it might be of interest to companies, organizations and communities.

At large, this research is not of a major interest to other companies. Its value lies in that it is very useful for Dep. X, but also the development of a research structure for identifying problems. Even though the research is not generalizable over a large number of companies, it is of obvious use for one company, as compared to generalizable research that aims to be of use for the majority of companies but may in fact not be of use to any company at all. Therefore, the authors believe the conducting of this research is justified by its usefulness.



## References

### Books

- Arnold, J., Cooper, C.L. & Robertson, I.T. (1998) *Work psychology - understanding human behavior in the workplace*. England: Prentice Hall.
- Byrman, A. (2002) *Samhällsvetenskapliga metoder*. Malmö: Liber.
- Clarke, T.J. (1999) *Success through quality: Support guide for the journey of continuous improvement*. Milwaukee: ASQ quality press.
- Fiske, J. (1997) *Introduction to communication studies*. Borås: Wahlström & Widstrand.
- Gladwell, M. (2001) *The Tipping Point*. London: Abacus.
- Harrison, A. & van Hoek, R. (2008) *Logistics Management and Strategy. Competing through the supply chain*. Harlow: Pearson Education Limited.
- Isaksson, K. (2000) *Tillit och psykologiska kontrakt i arbetslivet*. Lund: Studentlitteratur.
- Krajewski, L. & Ritzmann, L. (2005) *Operations Management- Process and Value Chains (7<sup>th</sup> Ed)*. Upper Saddle River, New Jersey: Prentice Hall.
- Lind Nilsson, I. & Gustavsson, L. (2006) *Ledarskapets inre och yttre resa*. Lund: Studentlitteratur.
- Nilsson, B. & Waldermarson, A-K. (1990) *Kommunikation – samspel mellan människor*. Lund: Studentlitteratur.
- Rogers, E. & Agarwala-Rogers, R. (1976) *Communication in Organizations*. New York: Free press.
- Sadler, I. (2007) *Logistics and Supply Chain Integration*. London: Sage.
- Shannon, C E & Weaver, W. (1959) *The mathematical theory of communication*, University of Illinois: Urbana.
- Tengblad, S. (2003) *Den myndige arbetaren: strategier för konstruktivt medarbetarskap*. Malmö: Liber Ekonomi.
- Vroom, V H (1964) *Work and motivation*. USA: John Wiley & sons Inc.

### Articles

- Boyens, J. "Employee Retention: the Key to Success". *Franchising World*, Vol. 39, Nr 2, 2007, p. 59-62.

### Internet

- Aktiesite. (2007). *Finansiell ekonomi*. Retrieved 2008-11-04 from [http://www.aktiesite.se/Mikroteori/moral\\_hazard.htm](http://www.aktiesite.se/Mikroteori/moral_hazard.htm)
- CSCMP. (2008) *Definitions of logistics*. Retrieved 2008-11-26 from [http://www.cscmp.se/CLMSite/CLM\\_logistik.htm](http://www.cscmp.se/CLMSite/CLM_logistik.htm)

Kelling, G.L. & Wilson, J.Q. (1982-03) *Broken Windows*. Retrieved 2008-11-10 from <http://www.theatlantic.com/doc/198203/broken-windows/2>

Wikipedia. (2008-08-04). *Cost of Poor Quality*. Retrieved 2008-11-05 from [http://en.wikipedia.org/wiki/Cost\\_of\\_poor\\_quality](http://en.wikipedia.org/wiki/Cost_of_poor_quality)

## **Appendices**

- 1. Pre-Study- Interview with Logistics Manager; Questions and Answers**
- 2. Pre-Study- Interview with Group Manager; Questions and Answers**
- 3. Interview with Logistics Manager at Dep. X; Questions and Answers**
- 4. Interview with Group Manager at Dep. X; Questions and Answers**
- 5. Interview with Group Manager at Dep. Y; Questions and Answers**
- 6. Interviews with Employees at Dep. X; Questions and Answers**
- 7. Interviews with Employees at Dep. Y; Questions and Answers**
- 8. Questions and Answers to survey at Dep. X**
- 9. Questions and Answers to survey at Dep. Y**
- 10. Investigation of Damage Levels at Dep. X; Results**
- 11. Investigation of Damage Levels at Dep. Y; Results**
- 12. DD Reporting - Comparison of Dep. X and Dep. Y**

# **Appendix 1 Pre-Study Interview with Logistics Manager; Questions and Answers**

This interview was conducted 2008-09-25.

## **1. How many employees work at the logistic department?**

We have between 40- 50 employees at the logistics department. Most of the workers are part time workers and they work when we call them or when we need them.

## **2. What does a typical day look like?**

A typical day for a logistics worker starts at 5am with a brief meeting, where they are informed about how the day will look like. After that they get their task lists and they start to work. The day is finished off at 10 am. Then, they have filled up today's delivery and moved around products according to what is missing in the shelves.

## **3. What type of difficulties appears during a normal day?**

People may call in sick and this leads to more pressure for the remaining workers if we have a big delivery that day. Another difficulty is time pressure; we have a deadline to work with every day. Furthermore, stress is usual due to the time pressure and the deadline we have every day.

## **4. How does the introduction for new employees work?**

The introduction information is of higher quality when we do not have peak deliveries; when there is not too much work coming in. Employees need to ask more questions if they are uncertain about things, and I believe that we encourage them to do so. We are getting better and better and we are trying to have discussions about important issues in our weekly meetings.

## **5. How do you motivate your employees?**

By encouraging them every day, talking with them not only about the daily job but also ask them how they are and if everything is ok. Small things like that.

## **6. Do you have staff meetings?**

Yes we do, like I mentioned earlier we have 5 minute meetings every morning, when we tell the staff about the situation and how the day will look like. Beside that we have a departmental staff meeting every second Thursday, where we discuss about important topics, news and what we have to get better at.

## **7. How do you inform your employees?**

Through 5 min meetings, staff meetings, e mail concerning those departmental meetings, a notice board, and the department magazine.

## **8. What kind of cost problems do you have at the logistics department?**

Our main problem areas are the DD and the WD costs that appear.

## **9. What are DD and WD?**

DD stands for delivery damages; damaged freight in the deliveries. Those become a logistics cost when we miss to report them, but if we report them, no money is lost for the warehouse. If we have received a damaged product and notice that it is broken, we have the possibility to take a picture of it and report it as a DD, if this is done before the pallet leaves the quay. WD stands for warehouse damages and is damages that the employees cause in the transport and filling up of products, and this is a big problem for the logistics department, since the warehouse carries the cost. We have to get better in both areas. It is a big problem in terms of money and a big problem towards our customers, because it does not look good when we have damaged products around the warehouse, it gives bad publicity.

#### **10. How big is the problem, in numbers or financial terms?**

The damage levels are measured in percentages of the total amount of cubic meters we handle. Our target is an average of 0,3 (accumulated) and the outcome has been an average of up to 1.7 on certain products some weeks. This number differs among the products. For carpets and couches, for example, we reach our targets. But for wardrobes, tables and some office supplies, the damage levels are too high. As you can imagine, that results in a big cost. We have a lot to work on, and a real effort must be made so that damage reporting is done properly, and so that we get less damages.

## **Appendix 2 Pre-Study Interview with Group Manager; Questions and Answers**

This interview was conducted 2008-10-02.

### **1. How many employees work at the logistic department?**

Our logistics staff is about 50, about 10 of the employees are full time employees and the rest are part time workers.

### **2. What does a typical day look like?**

A typical day at the logistics department starts at 5 am with a short meeting, that takes about 2 minutes, but we call it 'the 5 minute meeting'. This meeting takes place at the department, right next to the information notice board. During this 5 min meeting I, or the group manager, inform the staff about the delivery load for the day and what has to be done in the warehouse before we open at 10 am. We also hand out the task lists, to FL operators, which contain picking orders from the previous evening about what products that needs to be refilled because customers have bought the products so they are out in the shelves. Also, we inform them about important things that we have to think about when we work, like safety matters and that we have to be careful with the products we handle. All employees have the responsibility to report damages and keeping the workplace in order. More than FL operators, we have PJ personnel, who refill at places where forklifts cannot get in.

### **3. What type of difficulties appears during a normal day?**

It happens that people call in sick just 10 min before we start to work; this means a larger workload for the rest of the crew. It is usual that the delivery truck is late so we sometimes stand still. Shortage of time is something that we have to deal with every single day because of the deadline we have before opening the store for the customers. But we are used to all of these factors, and manage work even when they occur.

### **4. How does the introduction for new employees work?**

It works well. We have a check list and introduction agenda for new employees. The introduction agenda is divided into activities in four different days [see Appendix 2] but we normally do not stick to it very firmly. It works better when you talk about the things the employee asks about. Also, we have a checklist [see Appendix 3] so that no important points are left out. The new employees are also given a task list [see Appendix 4], which they read and sign.

### **5. How do you motivate your employees?**

They are paid salary, which is partly based on their performance in their work. Also, we try to be here for them as support, and they can come to us with any questions they may have. At the morning meeting, I try to encourage them to do their best.

### **6. Do you have staff meetings?**

Yes we do, beside the 5 min meetings every second Thursday we have a logistics departmental meeting with the employees. Even if all employees could come, only those working that day attend and then we ask them to inform the rest of the employees about what has been said. At the meetings we bring up important topics or we inform the employees about

the new things that happen at the store. We may also discuss problems at the department or targets we have to strive towards.

### **7. How do you inform your employees?**

By e-mail, notice board, departmental staff meetings, 5min meetings, and the department magazine.

The e-mail is sent after the departmental meeting. These sums up the meeting and all employees receive it and reply that they have read it.

The information notice board at our morning meeting point contains the e-mails. Also, at this location, the employees can find information on the amount of incoming freight and so on.

The departmental magazine is a small folder the warehouse makes each week. It usually lies in the restaurant at the warehouse and is put up on a notice board, so the employees can take part of it. You can also ask for it at the personnel department. The information in it concerns facts about the warehouse; the weekly turnover, it notes birthdays of employees and things like that.

### **8. What kind of cost problems do you have at the logistics department?**

We have been compared to other logistics department in other warehouses, and we have larger damage costs on DDs and WDs than they have. Mainly, the latter one is a problem, since they are unsellable products. Even since we built the external warehouse, these numbers remain high. We have a group called 'Cost hunters', who work at detecting sources of these costs, but no breakthrough has been made.

### **9. What are DD and WD?**

DDs are delivery damages, freight that is already damaged when it arrives to the warehouse. DDs might also become WDs if we miss to report them. But if reported, this is not a cost. Mostly, we are very good at this. WDs are warehouse damages, caused by customers or by employees due to lack of space, and this a big problem for the logistics department.

### **10. How big is the problem, in numbers or financial terms?**

I am not sure about the exact numbers but I can say that it is a big cost for us at the logistics department.

## Appendix 3 Interview with Logistics Manager at Dep. X; Questions and Answers

This interview was conducted 2008-10-07.

Questions marked C is related to the theory of flaws in communication, questions marked W is related to flaws in working environment, questions marked M are related to flaws in motivation and questions marked Cu is related to flaws concerning customers. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### 1. C. How well informed is your staff on DDs and WDs?

The personnel that have been at the logistics department for a longer period of time are pretty well aware of DDs and WDs. The ones that have been here for under a year however are not completely sure of how to handle DDs and WDs, partly because of poor information.

### 2. C. Do you inform the staff on regular bases about DDs and WDs?

No we do not. There is actually nothing saying we cannot have information about DDs and WDs on the five minutes meeting we have every morning. Although it is not the information itself that makes the difference, but the fact that it increases the employees' focus on it.

### 3. C. Do you think that all of the employees know what DDs and WDs are?

No. If I would make a guess I would say that half of the employees are not aware of DDs and WDs and the consequences for breaking, or missing to report damaged goods. The employees are not sure how to handle the process; they do not feel at home with it. Employees start to understand the meaning of DDs and WDs but they are still unsure about the importance and how to handle it in a proper way. Reasons for this are for example stress, lack of time and lack of information.

### 4. Are DDs and WDs a growing problem or is it a stagnant one?

When it comes to DDs and WDs we are among the worst in Sweden, however I do not have any historic numbers to compare today's figures with say two years ago.

This is a financial problem as well as a commercial one, since due to a damaged product or package, the customer gets a negative image of the company.

### 5. Do you have a plan of action regarding DDs and WDs? Can we look at it?

Yes we have. The group manager can help you with it and give you more information.

### 6. What has been done so far and what kind of actions did you take? Have you noticed any changes?

We have a group in the building called 'Cost hunters'. They meet regularly to look into certain problems within the company. They then inform the employees through the information paper. 5-6 months ago they presented an action plan but it is just recently that it has been implemented. I am not sure why it has taken so long but you can talk to the group manager about it, he knows more than me.

No not really, I have just been trying to set a good example a couple of times, spending time on the floor with the employees and doing their work, but it has not given any long- term effect.

### 7. Could it be a solution to have an extra employee that checks the incoming goods on arrival?



I cannot answer that, it is a good question. It is all about the cost; you have to look at the cost of an additional employee doing this only and compare it with the DD cost, to see whether or not you save money. If you come up with a good equation it might very well be a good solution. A great risk as I see it is that if you take in an employee just to check the goods, no one else will care about it and then he has to be there every day.

**8. C. How well does the introduction the company gives to your new employees work? Can that be improved?**

It has a higher quality when there is not much work coming in. Employees need to ask more questions if they are uncertain about things, and I believe that we encourage them to do so. We are getting better and better and we are trying to have discussions about important issues during our weekly meetings. However it can still be improved, especially the following up part, but it is better if you ask the group manager about this since he is in charge of it.

**9. W. Are there certain days when more damages occur?**

Talk to the group manager about this, he knows more. But I am sure you can find a pattern if you analyze historical data. For example it could differ depending on the personnel working, some are more focused on getting the incoming goods to the shelves and do not check them for damages. These damages may not be reported until the following day or even later even though they occurred some earlier day. It depends on what people worked that day, some are better at reporting damages than others. This does not mean that they break things but just that they make them visible, they see them.

**10. C. How damaged must a product be to be defined as a WD?**

Every little thing can count as damage. A product is a WD when it will probably not be sold because of the state it is in. For instance the product in itself could be wrecked, the box could be broken, or the package could be water damaged.

**11. C. Do you have any insurance for damaging of goods?**

I do not know, check with the group manager.

**12. C. When does a DD become a WD?**

It says so in the instructions (from the DC). As long as the good is on the floor and the plastic is still wrapped around it, it can be passed and reported as a DD to the delivery company.

**13. What would it cost to hire an extra employee in the evening before a big delivery?**

The evening hours are worth twice as much as a normal employee. This includes unsocial hours plus the cost for having a guard there. This is probably too large a cost.

**14. Cu. Is the customers' effect concerning infliction of damages large? How big is it in financial terms?**

Yes it is. If a customer wants a product, but a broken one of that kind lies on top of the pile, she moves it and picks a whole one that lies under it. This is a problem, since in moving the box she runs the risk of breaking it.

**15. W. How do the damages occur? Which part of the pallet is most often damaged?**

The group manager can answer that. There are a lot of factors to take into consideration when a product is moved between two different locations and no easy answer can be given.



**16. W. Has the warehouse damages decreased since the opening of the external warehouse?**

No it has not improved the situation. And we also have damages at the external warehouse where there should not be any. There are no customers here and the employees are not under any time pressure. So these damages occur simply because of poor focus, poor respect and inadequate knowledge.

**17. W. Do you have any kind of space shortage?**

No, definitely not. Before we opened up the external warehouse this could have been a reason but not anymore.

**18. C. Have you tried to get in touch with other warehouses?**

No, not when it comes to this matter. I have not been prioritizing it since the group manager and the 'Cost hunters' hold the responsibility over this area. I have been expecting them to benchmark a bit more.

In my eyes the cooperation between different warehouses can be made a lot better. I am trying to be the good ambassador and have made various visits to different cities, most recently up to Stockholm.

**19. M. What kind of staff policy does the company have? For instance how do you motivate your staff to perform well daily?**

Our personnel idea and HR strategy says that the employee is responsible for his own development. This is a flat organization so we work with motivation in all areas. Supervisors work at the floor doing the same work as the employees and this generates motivation and a sense of belonging. We also try to work with performance reviews to use the employees' ideas for improvement. We try to have regular activities involving not only the logistic department but the entire organization, approximately once a month.

**20. M. Have you considered motivating through carrot and stick?**

I, myself, am not very fond of the carrot and stick- method. Firstly, concerning rewards; give them one and the next one has to be better to increase their motivation. You start out with buying them breakfast, the next time you have to buy them lunch and the time after that something even more expensive. When it comes to punishments, you have to be consistent for it to work and if you make a mistake you will lose most of your credibility. To sum up, we work mainly with information, communication and education, together these three forms a good foundation for motivating your employees.

**21. C/M. If you could decrease the costs of the warehouse damages, how would you distribute the money you save?**

If we manage to decrease the amount of damages we get more working hours for the company. And these can be used for example to hire additional employees in departments where there is a very stressful environment, more resources to departments that need it, more kickoffs and an addition to wages.

## **Appendix 4 Interview with Group Manager at Dep. X; Questions and Answers**

This interview was conducted 2008-10-17.

As the interview is a semi-structured one, the respondent often took other directions, in answers, than intended by the researchers. Although, all answers are reported on here, since much of the other information will be used in the results and analysis of the cost problem. Exact questions and comments from interviewees are not written, since these included directing the respondent back to the question several times.

Questions marked **C** is related to the theory of flaws in communication, questions marked **W** is related to flaws in working environment, questions marked **M** are related to flaws in motivation and questions marked **Cu** is related to flaws concerning customers. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### **Concerning the 5 minute meeting at 5 am in the morning**

#### **1. C. Who is in charge for the meeting? Who participates?**

Most often, I am responsible for it. If I'm not around, I hand down the responsibility to someone else. All logistics employees are present.

#### **2. C. What happens at the meeting? What do you talk about?**

I hand out today's tasks and give vital information. It is supposed to take about 2 minutes, so the information that is handed out concerns only the morning work. All other information goes out via mail and so on. So DDs can definitely be something that I talk about, if we are not reaching our target results. I remind about how important it is to check incoming goods so DDs do not become WD. If we only have employees having been with us for a long time, we do not remind about it. And we know pretty much who reports damages, since you sign a note on the damaged product. There is statistics on how many DDs and WDs every employee has reported, and this is contained in files, but we do not make any record of it or use it in any way. It is, however, recorded what kind of products are written off. So we can see what kind of products have a lot of DDs, perhaps a carton is not proper or the pallet is not wide enough. Still, we have a pretty good feeling about who is good at reporting and who is not. So when employees, who are not very good at it, work, I make a reminder about checking freight. Everybody knows that you should check freight, but they do not know the whole picture probably.

### **Concerning the Thursday meeting**

#### **3. C. Who is in charge for the meeting? Who participates? What happens at the meeting?**

This meeting is held by me every second Thursday, and lasts about an hour. The employees are paid to be present. But we are 50 people at Dep. X, and only 6 of them work each morning, so most often, those are the only ones present. So different people come to these meetings at every occasion. We would like everyone to be there, but we have budgets based on hours, so we cannot ask 50 people to come in every two weeks for an hour, since the personnel is better used working at the department.

#### **4. C. Do all employees take part of the information? How?**

Since all employees cannot be present, I send out an e-mail on what the meeting concerned. Often, I write why it is so important with WDs. All employees receive these mails and know that they must read it.

#### **5. C. What is discussed at the meeting? What is the point of having the meeting?**

Everything- from routines that do not work and need to be discussed, to information about things that have happened and will happen. Before, we have not discussed damage levels much at all, but

the present year, this is our focus. This is something that concerns not only the warehouses, but also suppliers. This focus at the target level for WDs comes from the top management.

And, DDs and WDs, do not only concern the logistics department, but the entire warehouse. The logistics department is like a service department to the other ones. Employees of all departments must react when they see WDs. Before, the other departments have not done that, and right away, when damage reporting has not worked, the logistics department has been blamed. Everyone must think about it all the time for us to reach this goal. We have also created a group; 'Cost hunters', which I am part of. We are looking at product lists with damage levels. For example what products hold a lot of WDs and what products are we good at reporting DDs for and why those products are hit by a lot of DDs. Because we also have target levels for DDs; we are not supposed to receive damaged products. Perhaps packages, or the manner in which products have been stapled, are not satisfactory. Mostly, the focus is on DDs at the 'Cost hunter'-group, since it is a cost when not reported. Therefore, we cannot know the exact levels of DDs.

We cannot know whether the damage was a DD or if a customer has broken the package. If customers see damaged products, they will rip apart the next package as well to see if that one also is broken, so this way, we get a lot of WDs.

Our biggest problem at this point in time is that even if we make damage reporting work at the logistics department, it will not work all of the way. It will not work at the DCs, and this affects us. Also, we have to report DDs in a certain way. If we do not take pictures of the damage inside the truck, we cannot know for sure if we will be given the money for it back. And a DD we are not paid for becomes a WD, because it is not reported correctly. We will have meetings with our DCs during the autumn about this way of reporting. We do not feel this routine works. If the damage is turned the other way, into the truck, it will not be seen until it has been taken out of the truck, but we should still be able to report it, since it is in fact a DD. I was actually informed about this routine only yesterday. Before, we were allowed to write off DDs as long as the product is not unpacked, and this harsher demand has come only recently. But as I said, we will discuss this, because it is no viable routine for the warehouses.

**6. C. Do you believe the employees take part of the information e-mails?**

The reading of mails has not been working properly before, but it does work very well now. We feel like everybody reads them. Also, we book our personnel via the web, connected to the e-mail, so probably; this is why most employees nowadays read the mail. Now, we have also started requesting some kind of reply from the employees. So after reading it, they send back an "OK", that they have read the information.

**Concerning the introduction for new employees**

**7. C. Who is responsible for it? What happens? Does an introduction plan exist?**

The group manager, me, does the introduction. We have a checklist and introduction material. WD and DD is one of the first items on that list. But I can tell you that at the end of year 2007 for instance, we were in a very chaotic period where we were never done with the morning freight before 10 am, and we had just lost a lot of personnel. So the introductions were not very good at that moment in time.

**8. C. How long time does the introduction of a new employee take?**

They have two different introductions. The personnel department has one introduction, showing them the warehouse, giving them clothes and some education on work environment. At the logistics department, we have a departmental introduction. How much time it takes differs depending on who does the introduction, and how much that person knows about the department. But I will give an employee about one to one and a half hour here at the department [Dep. X] and the same amount of time at the external warehouse. I do not go through everything they need to know, because that is too much to listen to at once. The most important things are covered, and WDs and DDs are among those things.

Sometimes, the introduction is done with more than one employee, if for instance two are hired at once, or if we feel that someone already working at the department is not fully aware of the things we go through.

**9. C. Are they expected to perform the job by themselves after the introduction? Is there any follow-up?**

After the introduction, if employees have any questions, we count on them to turn to their colleagues. They should be able to turn to anyone who has been here longer than they have, but often, they turn to their closest manager.

The introduction is not finished after that one information day, but it is continuous work until the employee knows everything and does not need more help. We are working with situational leadership; adapting our guidance to the employees' individual needs.

To follow up, we have one-to-one conversations with each worker, and as well as annual developmental conversations. The one-to-one conversations work bad generally within the chain, because there is no time for them in the daily work. At the developmental conversations (in September), the employee is assessed during a couple of hours, depending on how much the employee has to talk about. A discussion is held on what the employee is good at and what the employee needs to do better and if help or support is needed from management to do this. Then, an individual developmental plan of action is crafted, depending on the ambitions of the employee. The follow-up meeting on this (in February/March) is then the basis of the salary rise. A grading scale on different work aspects is used to set the individual salary.

**10. C. Have you discussed a change of the introduction? Or is it good the way it is now?**

Today, the one doing the introduction talks a lot from own experience, so that person must be well aware. For anyone to do the introduction, we need some kind of material that explains how everything works. We have routines that are written down, but that file is too thick to carry around. We could make some kind of supporting, but brief, material on each thing that should be gone through at the introduction. Up until now, I am the only one who has held these introductions, and I talk from my head. But the checklist covers everything. What should perhaps be elaborated on is how much we talk about each item on the list.

**Concerning damage level lists**

**11. Do you have records of when damages are reported?**

We have weekly records of damage levels of different products. On these, outcomes are compared to target levels. These records are put together from the daily damage reporting done at the logistics department. The reporting lists are saved in files, but we do not make statistics from them on a day-to-day basis or based on when certain employees work.

**12. C/M. Do the employees take part of these records or are they only for management?**

We have discussed this too seldom. We will invite the person responsible for doing these lists, an employee at the recovery department, to a departmental meeting. So she will talk about WDs and DDs and how much money these problems concern. But still, we need to talk more about this, since these meetings are only attended by 6 employees every second week. There are probably long time periods between when the individual employee last heard about WDs and DDs. But as I see it, our department works well with damage routines, but the other departments are not as good. For instance, when the logistics personnel fill up at CS, we are responsible for that there are no damages on those products we fill up with. The personnel working at the department, during opening hours, are responsible for that there are no damages in the shelves. So old damages are their responsibility, and the effect of customers is their responsibility. They should make sure that all products fit in the shelves, and that for instance one shelf is not occupied by several products. They make sure that shelves are wide enough, so products do not break when they are refilled. They own the space, so to speak, and we only fill it up. So we must work together on this one. What is demanded from the logistics workers works well. It could work better, because it always can, but it works well. So it is the other departments that need to work harder on this.

The damage lists on all product types are not given to employees. This is used by us in looking at what products need to be relocated and as the basis of what we talk about at the departmental meetings. Instead, we have notice boards, for instance at the personnel entrance, on how we perform on WDs each week, compared to the target levels. This is something the employees can take part of every day, but discussing it is something we do at the warehouse level. This notice board does not concern DDs, since only WDs are a definitive cost for the warehouse, and the one we need to work on. DDs are not a cost, unless it has not been reported. DDs can actually be profitable for us if reported correctly. Because if that is done, we are paid all the money for it and we may even be able to sell it at our bargain department in the store. This is where old demonstration items, single unsold products and some damaged products are sold. This way, we make money on reported WDs.

And the problem is not that we miss out on reporting DDs, it happens very seldom, and it might be because it is not a visible damage or the employees are stressed, but this works well. All employees do check the pallets before putting them in the shelves, even if some do it better than others, mostly new employees are not as good at this. The biggest problem, as I see it, is that the suppliers load damaged freight and that we do not have enough space for the products at the warehouse. Many pallets would need a bigger surface than what is given to them, and that often leads to damages.

### **Concerning the notice board**

#### **13. C. What kind of information is posted on the notice board?**

It differs. If we write something about DDs and WDs in e-mails, the mail is also put up on the notice board, to really make sure that the information goes out. It is also other information that concerns the department.

#### **14. C. Do you think the employees read the notice board?**

We have told them that there is information on this board, but it is the responsibility of the individual employee to read the board. We cannot nag them about reading it. Also, the notice board hangs at the meeting point for the morning meeting, so the employees can see if something new is on the board, and if I just put something up, I sometimes even point it out.

### **Concerning general DD and WD knowledge**

#### **15. C. Are the employees well informed about DDs and WDs?**

They should know the difference between them and what they mean.

There are no major educational days about damages, but it concerns the daily work.

#### **16. C. Does the warehouse have any insurance covering damages?**

We have insurances for fixtures and movables, like shelves, but not for freight or sellable products. I do not think any insurance company would like to give us that kind of insurance. Imagine the cost of that premium!

#### **17. C. Have you considered if employees perhaps believe there is such an insurance?**

Well, perhaps the employees believe that there is such an insurance [the group manager thinks for a long time]. Perhaps this could be a reason for them not taking the damage costs more seriously. We are insured against practically everything else, so why not. Perhaps they believe so. No one has ever asked me this question before, but I will have to consider this.

### **Concerning motivational issues**

#### **18. M. Do you motivate the employees in other ways than by encouraging the workers verbally and by means of their salary? Are they ever punished?**

There are no punishments.

No, the meeting held in February/March, is the basis for salary. This includes looking at how they handled responsibilities such as for damages, only to a slight extent, though, since it is a part of the responsibility. But this is not pointed out specifically in the salary grading.

It would not surprise me if we eventually held some kind of competition on damage levels. We have had this arrangement before. For instance, 3 years ago, we had low security in the air. Everything that is hoisted must have two conveyor belts, according to safety rules, so things do not risk falling down. Sometimes, there was only one conveyor belt, and it even happened that pallets had no belts at all. If a child climbs the shelf and accidentally drags down something from a pallet, if a person is hit by it, this means serious damage or even certain death. At that point, we had a competition, well it was not a competition, but we told the personnel that they had one month to improve these procedures. We told them that there must be two belts on each pallet after this period of time, on the morning control of this. And the employees fixed it, so as thanks for the help; we bought pizza and soft drinks to the entire department. After that, each pallet has always had two conveyor belts.

If we do not achieve results on damage levels in other ways, perhaps such a competition can come in handy. But we try other things first, like discussing damages more and pushing employees to take it seriously. Also, since it concerns the entire warehouse, we cannot just have a competition on the logistics department.

The problem we have to deal with here is WDs! We nag about controlling DDs, but WDs is the problem. DDs are something that is discussed with suppliers, if the products are not packed properly. For instance, they are allowed to stick out a maximum of 10 cm on each side of the pallet, and if this regulation is not met, we turn to the suppliers, because this otherwise turns into WDs eventually when there is not enough space for the pallet in the shelf. This co-operation does not work entirely, since our suppliers are at every corner of the world. The chain must also work with this at a central level. Also, the one loading the cargo at the DC must be careful in filling up the truck. They are told to fill up the truck as much as possible, and they do not discuss damages at all. And if the chain all over the world manages to fill up all the trucks with an additional of 10 pallets, the financial gain outweighs the loss of the damage costs any given day, unfortunately. But the focus we need to have here at the employee level is on WDs, and not on filling of trucks.

The problem here at this warehouse is shelf space, and to some extent reporting of DDs. Perhaps this is not at its optimal level because of a high work load.

There is a difference among the warehouses in Sweden on how many work hours they have in their budget. This is based on the turnover of the warehouse. The larger turnover, the more hours you get to the warehouse. To get resources, the warehouses must make profits.

As we compared ourselves to Dep. Y, we note that there, all wide products are put in the external warehouse, so customers cannot break products. But, on the other hand, they must put resources to picking out the orders for the customers since only employees are allowed to be in the external warehouse. But this depends on how you want to service the customer. Here, we move everything that only sells in small amounts to the external warehouse, so we get empty shelves at the CS. This allows us to move around pallets and products, so there is enough space for them. This is something we were working on intensively right now, but it is some lengthy work. Each week, about 5 product articles are moved around. And pallets of different sizes are moved around to get optimal solutions. We are working on having the right products in the CS. Those products that we sell a lot of are put here, to best service the customer. Dep. Y has a much smaller CS than we do, so they have taken all wide products and put in their external warehouse, but as we see it, this is not the point of the external warehouse. The meaning of it is to put products that are not sold a lot of. We would rather see that products are moved according to that so we make room also for wide products at CS as they are sold a lot of.

But, if you look at the shelves at the CS and at the shelves of the external warehouse, everything is clean, neat and there are no damages at the external warehouse. This is so because there are no cus-

tomers there, but only employees. Also, we fix damaged products here to a larger extent because we have time to do it, and there is a kind of guarantee that the product is not damaged, since it has been checked better here. Of course, damages occur at the external warehouse as well, but it is not a problem. Also, we have had no group manager up there for 6 months, and reporting of DDs has not been handled as well as it should. But from now on, this will get better, as a group manager has been appointed.

To minimize the risk of damages, a pallet should be handled as few times as possible. At this point in time, 3-4 handlings are made on each pallet up until it arrives to the customer. One is at the supplier, at DC it can be several times, but we have no statistics on this, at the warehouse it may also happen several times. DC should check the pallet before loading it also. The goal is for no damages to arrive to the warehouse.



## Appendix 5 Interview with Group Manager at Dep. Y; Questions and Answers

This interview was conducted 2008-11-06.

The questions do not entirely correspond to the ones asked to the group manager at Dep. X, since not all questions were relevant for the group manager at Dep. Y and some additional questions were interesting as well.

Questions marked C is related to the theory of flaws in communication, questions marked W is related to flaws in working environment, questions marked M are related to flaws in motivation and questions marked Cu is related to flaws concerning customers. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### 1. C. How well informed is your staff on DDs and WDs?

The employees know the basics about DDs and WDs. We inform them about it in our department meetings but of course it differs among the employees. The ones that have worked here for a long time and are here regularly know it better than employees that just work every second weekend.

### 2. C. Do you inform the staff on regular bases about DDs and WDs?

Yes, it is a very important part of our introduction, and we try to tell them about it continuously while they work. However, we do not talk about it so much in the two minute meeting we have before we start in the morning. Also, for those employees that did not attend the department meeting, weekly information is given about what we have talked about.

### 3. C. Do you think that all of the employees know what DDs and WDs are?

The employees know what DD and WD mean. They have been told that we have a target for 0,27 % warehouse damages but I do not think that all of them are aware of exactly what that means. We could improve that information and try to make the employees see the big picture.

### 4. Are DDs and WDs a growing problem or is it a stagnant one?

I believe it is a stagnant problem. And because we reach the goals we have, we focus our resources on improving other areas instead.

### 5. C. Do you have a plan of action regarding DDs and WDs? Can we look at it?

No we do not have a written one. But if we see in the report that we have WD levels higher than average we look into what has happened, why it happened, how it happened and when it happened. It is often very easy to find the cause for it.

### 6. What has been done so far and what kind of actions did you take? Have you noticed any changes?

We have regular information about DDs and WDs. We have also introduced responsibility areas when it comes to DDs and WDs. This means that every morning, one person has the ultimate responsibility when it comes to reporting WDs and DDs. It is also important that we do not forget about this even if we have a very stressful day.

**7. C. How well does the introduction the company gives to your new employees work? Can that be improved?**

We are in the process of creating an introduction program. When I started, I basically got a one hour tour and then I was expected to start working. Now it looks a little bit like this; you sign the contract, get a tour around the building and get the theoretical areas explained to you. After this, you have two days when you have support from another employee; you work alongside him or her and get to see how the practical part works. A lot has happened the last year and a lot will happen in the near future as well, I have only been working at this position for three months and, of course, there are a lot of things that we can improve. For example I would like to have a follow up 3-4 weeks after the introduction, like an extra introduction to see if the employees have learned all the theoretical parts. This of course costs money but I believe that it is something that it worth doing in the long run.

**8. W. Are there certain days when more damages occur?**

Well if we have a lot to do, less damaged goods are reported and these will most likely be reported the following day instead. And this summer, when we had vacation personnel, there was an increase in WDs, but otherwise I would say no.

**9. C. How damaged must a product be to be defined as a WD?**

If the box is broken or opened it counts as a WD. We also have an extra person from Connexi that walks around in the store and repairs broken boxes. He is here as part of a local government program doing job-training, so we do not pay his salary.

**10. C. When does a delivery damage become a warehouse damage?**

You have to take a picture of the damaged good, preferably when it is in the truck, however it is also acceptable if it is taken on the quay, for it to be reported as a DD. If you have removed the plastic and taken the pallet into the warehouse it has become a WD. The employees know this.

**11. Cu. Is the customers' effect concerning infliction of damages large? How big is it in financial terms?**

Yes it is, especially on certain goods. I am not quite sure if there is anything you can do to make this better. But we have WDs in our external warehouse as well, and we should not, [since no customers are there]. I believe one reason for this is that you do not pay attention when you get the delivery and miss to report DDs, which then become WDs, or the employees could just be sloppy. We always have the goods that go to the external warehouse in the back of the truck, this to minimize the times when you move the goods. The employees start to work at six o'clock in the external warehouse and the goods we have there are those we sell less than three of per week plus kitchens. This arrangement has been decided on local level.

**12. W. Do you have any kind of space shortage?**

We have a shortage of space in our in-store warehouse [CS]. We would like to be able to have more articles there.

**13. C. Have you tried to get in touch with other warehouses?**

I have not had that much contact yet but as I said earlier I have only been working as a group manager for three months. I know that the flowchart manager here has a lot of contact with other warehouses. Within the organization there is not that much rivalry and if we can help another warehouse we gladly do so.

**14. M. What kind of staff policy does the company have? For instance how do you motivate your staff to perform well daily?**

We have our morning meeting where we try to communicate what goals we have for the day. Usually, I am the one in charge of the meeting. Also, I believe it is important to encourage the employees while they work. We plan our work to finish unloading one truck before starting on the next one, to try to get closure between them.

**15. M. Have you considered motivating through carrot and stick?**

No I do not believe it is a good idea, I think rewards should be spontaneous. You should not expect to get something extra every time you do a good job. You already have your salary.

**16. C/M. If you could decrease the costs of the warehouse damages, how would you distribute the money you save?**

If we managed to cut down costs further it would probably mean a larger budget, more hours for the department.

**17. Why do you think Linköping is better than Jönköping when it comes to warehouse damages?**

One of the reasons I believe is the fact that we use different forklifts. You use the bigger ones, which are faster but it is also easier to damage goods with them. Otherwise, maybe the workers are not paying attention.

**18. Cu. How do you believe the damage infliction is distributed among employees and customers?**

Tough question, but if I was to make a guess I would say that employees cause approximately 70% of WDs and customers the remaining 30%. Although, the customer effect is mostly indirect, meaning that they damage goods because there are already broken goods in the store.

## Appendix 6 Interviews with Employees at Dep. X; Questions and Answers

These interviews were conducted:

Employee	Date	Termed
Forklift operator (permanent). Worked for 17 years.	2008-10-25	E1
Forklift operator (paid by the hour). Worked for 4 years.	2008-10-23	E2
Forklift operator (paid by the hour). Worked for 4 months.	2008-10-24	E3

Questions marked C is related to the theory of flaws in communication, questions marked W is related to flaws in working environment and questions marked M are related to flaws in motivation. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### Questions asked to all respondents:

1. C. What are your work tasks?
2. W. Are there things you think you should have time to do, but do not in reality because of lack of time?
3. W. Do you think the work load is too large on you?
4. M. What is the most common reason for you not to report a damage? Could it be lack of time? That you do not know how to do? Do you think it is someone else's responsibility?
5. C. Did someone explain the concepts DD and WD when you started working? If not, when did you find out what they mean?
6. C. When does a delivery damage become a warehouse damage?
7. M. When you spot a damaged good on a shelf, what do you do/how do you think? Report it? Think that it has been there for a while now, so it might as well lie there for a while longer? Think that I did not break it so it is not my responsibility?
8. C. If you need help with something, who do you turn to?
9. How do you think the situation with DDs and WDs and the costs of them may be improved?
10. C. Whose gain is cut costs? Where to is saved money reallocated?

### Answers

#### E1

1. Everything that has to be done so the warehouse looks fresh and new every day before opening at 10 o'clock. I want to set a good example. This means unloading the goods from the truck, transporting them into the warehouse, keeping the shelves clean when we reload etc. Besides that, to report WDs and DDs and taking pictures of the last mentioned.

It is my responsibility to keep it clean in the warehouse. Also, I am in the 'cost hunters' group.

2. Yes, to do an optimal work every day there is a shortage of time. I wish that we had more time, so that I and the others could clean the warehouse in a more proper way. We are not very good at this. I do not have the time to pick up or report damaged goods a couple of shelves away from what I am refilling.
3. Not really, but sometimes when we have a big delivery in the morning. However, it would be nice if we had some more time than just five hours before opening. Stress gives negative effects, not only on people, but also on their work effort. But, WDs among the CS is a responsibility we share with CS personnel, so we could keep the CS area really tidy if all employees took their responsibility. As it is now, CS and FL employees do not work closely enough; we need to help one another more and emphasize certain shelves, as they look worse and give a bad impression to customers.
4. If I do not report a WD it is because I do not have time, or prioritize other work tasks. Often when we have a big delivery, and a high work load, I do not have the time if the damage is a couple of shelves away, like I said before. If we just had an extra hour every day before opening, the warehouse would be tiptop.
5. No, because DDs and WDs are relatively new concepts. We did not have those when I started to work here. But yes, I know what they are and I know what the picture looks like. Although, no one educated me, but I had to look for the information myself. So I do understand if some of the workers do not get it, because the introduction and education is not satisfactory. For instance, PJ employees are not well aware of what DDs and WDs are about.
6. When you miss to detect the DD and do not report it, then it becomes a WD. And the reporting program can report that even the next day if you find it than but before they report the damage to the supplier.
7. I report a damaged good straight away if it is in the same shelf that I am refilling. If it is a couple of shelves away I probably will not report it. And, of course, there are two scenarios. If we have an ambitious work team, I can check an extra time in the warehouse. Otherwise I do not have the time for that extra check. We do not have the time, like I said before. Our number one priority is the delivery and filling up the shelves.
8. It depends on what it concerns. In general, employees rarely turn to the managers, so we have to pay attention to our co-workers if they are insecure about anything. The new employees do not even know who to turn to. Also, our group manager has two departments to care about, so he has got too much to do.
9. It is important to educate the employees in a proper and a better way about the problem. We need to inform the staff in a better way than just e-mailing. E-mailing is good, but not enough. Many of the employees do not even know where to find the information files. If someone has been away from work one week, that person does not automatically get the new information, but has to ask for it. Information must be easily accessible. Also, too much useless information is given, while important things are not told. The new employees must get a better introduction to their job than just a few hours. It is naïve to think this is sufficient. And after the introduction, they also need an additional introduction after a couple of months when they go through it again. And, the managers do not have to be the ones doing the introductions, because they do not know everything. Other things are that for instance, the new employees could only get for instance one list, and the full-time workers get three, so we do not put too much pressure on the un-experienced ones. More, the computer system is hard to deal with; the risk of doing something wrong is too big.

10. If damage levels were cut drastically, another full time employee could be hired. But we have to put up small goals in order to reach such a large one.

## E2

1. I operate the fork lift. I finish the lists as soon as possible, and then take care of the day's delivery, which must be done by 10 am.
2. Between the hours 5 am and 10 am, lists and delivery must be taken care of. My goal is to have finished the lists before 8 am. Everything depends on how many cubic meters of freight that has arrived. If I can make time for other things, like reporting damages, I do that as well. After 10 am, I punch lists, update cars and such things. Of course I care about how the warehouse looks and try to tidy up, but those employees that have only been working for a short while have not acquired the same sense of routines that I have, so they hardly ever make time for such things.
3. No, I do not think so. As long as everybody takes care of their tasks, I am fine as well.
4. Since the time between 5 am and 10 am is devoted to finishing off lists and taking care of the delivery, damaged freight at CS can be taken care of afterwards. At CS, they go through the warehouse once every day and take care of reporting damages. But if I can find the time to do it myself, I do it. It is a joint responsibility between logistics and CS to report and gather damaged products. If I am about to fill up a certain item, and something is damaged there, of course I bring it along and report it. If I am operating a mixed pallet at the time when I spot the damaged product, I never bring it with me, because it takes so much time to bring it along and write it off. I want to do as much as I can during the 5 morning hours, and reporting damages is as much the responsibility of CS as it is of the logistics department. I try to make sure it is clean and neat where I am working, and report damages to the group manager directly if I can. However, many employees at logistics simply ignore damaged goods, but if I would do the same, the problem would grow larger. The biggest problem, as I see it, lies in those who have only been working for a short time. I have been working here for a couple of years, so I feel the responsibility towards customers to make sure CS is clean and tidy. Customers do not want to shop if that is not the case. But the new employees do not feel the same deal of responsibility. This is mainly because they are not given the proper preconditions to manage the job tasks, in that they are not informed to the extent they should be about how important these matters are. Although, some of the full time workers also do not feel the load of responsibility they ought to, and therefore do not pick away damaged goods and litter.
5. Yes. When I started at the company, they went through EVERYTHING with me, from the computer system and organization to everything that happens at the warehouse.
6. If you miss the damage when it comes in the delivery and detects it afterwards. You have the chance to report it until noon. You take a picture of it and it is reported to the transporter or supplier, I do not know to which person. If you have put the damaged good on a shelf and then see it, you still have the chance to pick it down and report it, if you do it before noon. If I miss it today and detect it tomorrow, it is a WD.
7. Most often, I report it immediately, even if I did not break it. If the damaged good is in the way of filling up new goods, you have to move it, so you might as well report it. Sometimes I put damaged goods on the floor where I am filling up, and then just before 10 am, I bring an empty pallet on the forklift and pick up all damaged goods. But sometimes, this is forgotten, and that is mainly when there is too much to do. All the lists and deliveries are of course our main priority.

8. The ones that have been working longer than me, who know more than I do. I never ask evident things, because I have been working for such a long time, but for instance if I have a question about the computer system. I hardly ever ask the group manager or the logistics manager, only if I have got a question about salary or something. Not about work tasks.
9. Teaching the new employees how important it is to report DDs so they do not become costs. And how important it is to pick away WDs so they do not create a mess. The information is generally very poor, and it has been like this during the entire time I have been working there. I have told the group manager and another manager at the warehouse this a thousand times, but nothing changes for the better. The group manager does his best, I can tell, but he carries too much responsibility [over both the logistics department and the external warehouse] to be able to inform his employees in the way he should. We frequently receive e-mails containing information, but this is not enough, and cannot replace information at the workplace. Many employees neglect reading their e-mail. And there are templates of how work tasks are to be done (in files and so on) but we do not know where to retrieve this information. I mean, where are those files? It would be better to use information boards at the workplace on what happens and so on. If I have not been working for a week, and something has changed, a procedure or the location of something, I do not get to know unless I ask. They expect us to find out these things ourselves.
10. Since WDs is a cost for the warehouse, the logistics department would incur less costs if damage costs could be reduced. I do not know if they even compare departments to see where the greatest cost happen, but they do talk a lot about that we need to cut WD costs. It said so recently in the mail from the group manager. But I do not know how the cost savings are allocated.

### E3

1. My job is to operate the forklift, to refill the shelves and to drive in the delivered goods. Besides that, to report the damaged goods that I come across with when I refill the shelves. I also work at the external warehouse.
2. Sometimes you do not have the time to report or remove the damaged goods because of the time shortage or when the damaged goods are a couple of rows away.
3. It varies from day to day, but it happens that we have much to do some days, but not every day.
4. If I do not report WDs, it is always because of that I do not have time, or prioritize other more important work tasks.
5. No, they just mentioned it and that was it. I had to learn by myself, or colleagues showed me.
6. To be honest I do not really know.
7. I prioritize the task lists and the delivery before I can afford to report the warehouse damages that I have spotted. Like I said before, it is all about the time we have left.
8. I am not ashamed of asking anyone.
9. Perhaps the warehouse can have an extra worker that goes around and reports the damaged goods that we miss to report.

## Appendix 7 Interviews with Employees at Dep. Y; Questions and Answers

These interviews were conducted:

Employee	Date	Termed
Forklift operator (permanent). Worked for 28 years.	2008-11-06	E4
Forklift operator (paid by the hour). Worked for 1,5 years.	2008-11-14	E5
Forklift operator (paid by the hour). Worked for 4 months.	2008-11-14	E6

Questions marked C is related to the theory of flaws in communication, questions marked W is related to flaws in working environment and questions marked M are related to flaws in motivation. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### Questions asked to all respondents:

1. C. What are your work tasks?
2. W. Are there things you think you should have time to do, but do not in reality because of lack of time?
3. W. Do you think the work load is too large on you?
4. M. What is the most common reason for you not to report a damage? Could it be lack of time? That you do not know how to do? Do you think it is someone else's responsibility?
5. C. Did someone explain the concepts DD and WD when you started working? If not, when did you find out what they mean?
6. C. When does a delivery damage become a warehouse damage?
7. M. When you spot a damaged good on a shelf, what do you do/how do you think? Report it? Think that it has been there for a while now, so it might as well lie there for a while longer? Think that I did not break it so it is not my responsibility?
8. C. If you need help with something, who do you turn to?
9. How do you think the situation with DDs and WDs and the costs of them may be improved?
10. C. Whose gain is cut costs? Where to is saved money reallocated?

### Answers

#### E4

1. I unload the goods from the truck, transport them into the warehouse, take all the empty pallets out and try to keep everything clean and in order. If I see a damaged good it is my responsibility to report it and remove it from the shelf. However, if there is a damaged good at the bottom of the pallet I just put a green sticker (marked as a WD) on it and remove it later when the goods that are placed on top of it have been purchased. DDs can be tricky to spot sometimes, so the next person that moves the pallet also needs to check for



them. It is not my responsibility to keep it clean in the CS department; we have a guy from Connexi doing this. Before, it was the sales personnel that took care of it.

2. I have worked here for a very long time and earlier, I tried to do everything, but there is not always time. Now, if I do not have time to do it today, I just do it tomorrow instead. It is also important that everyone does what they are supposed to. Before, this did not work very good, but ever since we started with specific work tasks it has become much better. And I also believe that it is important that you are able to say that you do not have time to do a task that has been appointed to you. Someone else probably often can help you with that.
3. Between five o'clock and ten o'clock in the morning, it is quite a lot to do. The afternoon, however, is calmer.
4. If I do not report a WD, it is because I do not have time, or prioritize other work tasks. We had a girl that used to check all the pallets for damages, but this duty was removed to improve efficiency. Management wanted the pallets to be moved fewer times. It is also quite complicated to report a damage and it takes time. Also, DDs have however improved lately, though they rise a bit in the summer when the ordinary personnel are on vacation at the DC.
5. When I started here there was no such thing as DDs and WDs. The last 5-6 years, the concepts have become important and we have gotten regular information, plus lists that show how well we are doing compared to other warehouses.
6. I think a DD has to be reported straight away, not completely sure about it though. But I know that I cannot do it the next day.
7. I report a damaged good straight away if it is in the same shelf that I am refilling. If it is a couple of shelves away, I probably will not report it.
8. [Not relevant.]
9. The packaging is of great importance; many of the goods can be packaged better to keep them from breaking. I have been walking around the warehouse with a girl from our suppliers and pointed out flaws and I report to her regularly.

## E5

1. My work tasks are to keep the CS department clean and in a good condition when the customers arrive at ten o'clock. This includes refilling and reloading shelves, clean the shelves, and of course operate the forklift.
2. Not really, but sometimes there are things that I do not find time to do, nothing specific. However I usually do it later instead, although sometimes I forget about it.
3. No, even though some days can be pretty tough.
4. It is because I do not have enough time, it is my responsibility to report a damaged good if I see one, even if someone else has broken it. Sometimes I do not have time to do it straight away but then I fix it later.
5. Yes, it was explained to me in the introduction. Then, I was also shown how to handle it practically during my first days by other employees until I was sure of how to handle it myself. This includes for example that you need to take a picture of a DD.
6. I think you have to do it almost straight away, I think it is ok to report it even if the good has been moved into the warehouse as long as it is the same day.
7. I report a damaged good straight away if I see one, even if it is a couple of shelves away from the one that I am refilling.
8. The manager, or someone else that I think can help. It depends very much on what kind of question I have.

9. I believe it is important to report it on time so we do not get any damaged goods into the warehouse, that we get them out of the store. And also to be more thorough with DDs because if we miss to report them they become WDs.
10. I do not know where the money goes actually. [The authors then explained it to him.] Well, if I knew that, I guess it would work as a motivational tool for doing a better job.

## E6

1. I operate the fork lift, refill goods and make sure the shelves are in order, unload trucks and hoist goods.
2. Sometimes it is hard to get all the goods into the warehouse by ten o'clock, but that is more general. I do not have work tasks that are just mine that I do not have time for. And when it comes to reporting damaged goods it does not have top priority. Also to report DDs is quite complicated which means that you sometimes do not have time for it.
3. It depends, not usually in the weeks but, of course, holidays could be tough.
4. It is because of the time pressure, or that I prioritize other work tasks.
5. Yes, it was explained the first day. I had a person who I walked alongside, and he showed me the slip and explained thoroughly how you were to handle it.
6. As soon as you take the forklift into the truck, it is usually ok if you do it on the quay as well. The person at the supplier that receives the report needs to be able to trust the person that has made the report. And sometimes it is hard to spot DDs in the truck if it is on the back of the pallet which means you need to be able to report it when it is on the quay as well.
7. I usually remove it. Of course it is hard if it is on the bottom of a pallet, then I report it, put the date and my name and then put a slip on it so the customers know that it is damaged. It is important not to be sloppy with this because it will only mean more work for the department in the long run.
8. Different people, could be almost everyone although the group manager knows quite a lot so most of the times I ask him.
9. You could set aside a day or a couple of hours to inform the employees thoroughly because I believe a lot of them are insecure of how to handle them, and that means that they just leave the damaged goods for someone else to report. You could have an education or something like that.

## Appendix 8 Questions and Answers to Survey at Dep. X

These surveys were conducted 2008-10-16 through 2008-11-24.

The respondents' answers to the survey questions are compiled below.

Position # respondents Dep. X

CS= Customer Shelves and Sales personnel 5

FL= Forklift operator 11

PJ= Pallet Jack personnel 6

and

P= Picker

S= Sales personnel

Questions marked **C** is related to the theory of flaws in communication, questions marked **W** is related to flaws in working environment and questions marked **M** are related to flaws in motivation. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

### **C. Question 1: Do you know what the meaning of the term WD is, and what does it imply?**

A brief answer of the "translation" of WD is enough to have answered this question correctly. For the second part of the question, what the meaning of WDs implies, the respondent must have given at least a correct short note, such as "damage occurring at the warehouse" or "damage inflicted by customer". However, **none** of the respondents have given a complete answer that would show that they understand the full picture of WDs. In utopia, all answers should be in the Yes column, and none in the No column.

Do you know what the meaning of the term WD is?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	3	10	1	5	1
Do you know what the meaning of WD implies?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	3	8	3	5	1

Table 1 WD

### **C. Question 2: Do you know what the meaning of the term DD is, and what does it imply?**

A brief answer of the “translation” of DD is enough to have answered this question correctly. For the second part of the question, what the meaning of DDs implies, the respondent must have given at least a correct short note, such as “damaged product in transport” or “damage not inflicting a cost at the warehouse”. However, **none** of the respondents have given a full answer that would show that they understand the full picture of DDs. In utopia, all answers should be in the Yes column, and none in the No column.

Do you know what the meaning of the term DD is?					#of respondents
<b>CS</b>		<b>FL</b>		<b>PJ</b>	
Yes	No	Yes	No	Yes	No
3	2	10	1	1	5

Do you know what the meaning of DD implies?					#of respondents
<b>CS</b>		<b>FL</b>		<b>PJ</b>	
Yes	No	Yes	No	Yes	No
1	4	8	3	1	5

Table 2 DD

**C. Question 3: Whose responsibility is it to report and remove damaged products?**

The definition of what consists a correct answer is in accordance with management's view on whose responsibility it is to report and remove damaged products. When correct answers were given, the respondent's answer is counted in the Yes column. In utopia, all answers should be in the Yes column, and none in the No column.

Correct answers of whose responsibility it is, as specified by management, are:

- |  |                              |
|--|------------------------------|
| -if damaged product arrives in delivery          | FL/ logistics                |
| -if damaged product is in the store              | All employees; FL, PJ, CS, S |
| -if damaged product is in CS area                | FL, PJ, CS                   |
| -if damaged product is in the external warehouse | FL, P                        |

Whose responsibility is it to report and remove damaged products?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
1. -if damaged product arrives in delivery					
4	1	9	2	4	2
2. -if damaged product is in the store area					

0	5	7	4	0	6
3. -if damaged product is in CS area					
4	1	7	4	4	2
4. -if damaged product is in the external warehouse					
--	--	7	4	5	1

Table 3 Responsibility to report and remove damaged products

Comments concerning Question 3:

CS personnel:

Concerning question one, 4 of the CS personnel answered correctly. The last 1 did not answer the question at all. Question two was not answered correctly by anyone. 3 of them answered S personnel were responsible, which is only partially correct. The remaining two answered “personnel”, which is too brief an answer. Concerning question three, 4 respondents answered that it is their own responsibility, or FL personnel. The last 1 answered that S personnel was responsible of this. The CS personnel never works at the external warehouse, thus the fourth question was not relevant for them.

FL personnel:

Concerning question one, 9 respondents have answered correctly. The remaining 2 have answered that it is the responsibility of “the employee”, thus the researchers cannot conclude the respondent has answered correctly, and that it is the responsibility of “only the one unloading the truck”. The correct answer to question two would be that it is the joint responsibility of all employees at the warehouse or that it is the responsibility of the one that discovers the damage. 7 respondents have answered in this manner. The remaining 4 respondents are either lacking answers or have answered too cursory. 1 respondent answered “employees”, another answered “personnel in the store”, and one answered “those who handle the unpacking of products”. Question three is correctly answered if the respondent has made it clear that it is a joint responsibility. Thus answering merely “employees”, “FL personnel” or “PJ personnel” is not enough. 4 respondents have done this. The remaining 7 have in some way made it clear that PJ-, FL-, and CS- personnel share the responsibility. Question four is answered correctly if the answer is “those working at the external warehouse”, “the one detecting the damage” or “FL personnel and P personnel”. Incorrect answers are “employees”, “personnel” only answering “FL operators”, or failing to give any answer at all.

PJ personnel

4 out of 6 respondents have answered the first question correctly, that it is the responsibility of the fork lift operators/ logistics employees to report and remove delivery damages. The 2 remaining respondents have erroneously answered that it is the responsibility of S personnel and PJ only. As for the second question, all respondents have answered that it is the sole responsibility of S personnel to report and remove damaged products in the store area. The answer to question three; the responsibility over damaged products in the CS area has received three sorts of answers. The entirely correct one, that it is the joint responsibility of FL, PJ and CS, has only been answered by 1 respondent. 3 respondents have answered that it is the CS personnel, and these have been considered correct answers as well. The 2 remaining respondents have answered that it is the responsibility of S personnel,

which is wrong. As for the last question; number four, 5 respondents have answered that the responsibility lies at logistics personnel or “those working at the external warehouse”. These answers have been interpreted as correct. The remaining 1 respondent answered “I have no clue”.

#### **C/M. Question 4: If the cost of WDs and DDs is reduced, who will take part of the saving?**

Measured as the number of correct answers. Yes= correct answer.

As management claims, the cost savings will result in more money for the entire warehouse budget, resulting in higher salaries and more working hours for all kinds of personnel. None of the respondents have given a full answer to the question, suggesting they understand the entire process of where cost savings end up. However, to have answered the question correctly, it was enough that respondents answered something short, but accurate, like “it goes back to the warehouse”, “it goes to salary increases” or “less costs will lead to higher salaries”.

If the cost of WDs and DDs is reduced, who will take part of the saving? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
0	5	5	6	2	4

Table 4 In case of cost reductions in WDs and DDs, who gains.

#### **C. Question 5: Does the warehouse have an insurance covering the cost of damaged products?**

Measured as the number of correct answers.

Management’s answer to this question is that there exists no such insurance. Therefore, if respondents have answered No to this question, they have a correct answer, thus resulting in ending up in the Yes column. If they have answered Yes or Do not know, the answer is incorrect, thus resulting in ending up in the No column.

Does the warehouse have an insurance covering the cost of damaged products? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
0	5	4	7	0	6

Table 5 Insurance covering the cost of damaged products.

#### **C. Question 6: Do you read the information e-mails, about the departmental meetings, sent out by the group manager?**

In this question, Yes or No simply presents whether or not the respondents read the e-mail. Thus, no answer is correct, but this is an attitude question. PJ and CS personnel do

not receive the e-mail containing the departmental meeting, and are thus not included in the answers. This question had a follow- up question concerning what the latest e-mail was about. Although 10 respondents claimed to have read the e-mail, one of them did not provide any example of what the mail said. The others pointed out different things from the e-mail. 3 respondents answered that the mail contained a funny story while three others pointed out that the mail was about the problem of overfilled shelves and pallets. The last three answered general things; “work is supposed to be done at 10 am”, “it is important to stay positive at work” and “the workplace must be kept cleaned and in order”.

Do you read the information e-mails, about the departmental meetings, sent out by the group manager? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
-	-	10	1	-	-

Table 6 Information e-mails

### **C. Question 7: Do you regularly read the information notice board at Dep. X?**

In this question, Yes or No simply presents whether or not the respondents read the notice board. Thus, no answer is correct, but this is an attitude question. The CS personnel are not instructed to read the notice board.

Do you regularly read the information notice board at Dep. X? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
--	--	6	5	0	6

Table 7 Information notice board

### **W. Question 8: Do you think that you have got too much work to do for the time at hand to perform the work?**

In this question, Yes or No simply presents whether or not the respondents think they have got too many work tasks, considering the time they have at their disposal to conduct them. Thus, no answer is correct, but this is an attitude question.

Do you think that you have got too much work to do for the time at hand to perform the work? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
4	1	6	5	2	4

Table 8 Amount of work versus time to perform it

## Appendix 9 Questions and Answers to Survey at Dep. Y

These surveys were conducted 2008-11-06 to 2008-11-24.

The respondents' answers to the survey questions are compiled below.

Where

# respondents Dep. Y

CS= Customer Shelves and Sales personnel

FL= Forklift operator

PJ= Pallet Jack personnel

and

P= Picker

S= Sales personnel

Questions marked **C** is related to the theory of flaws in communication, questions marked **W** is related to flaws in working environment and questions marked **M** are related to flaws in motivation. Question number 9 was not related to any of the problem areas, this was used to establish in which area the employees believed the problem was.

No information emails were sent out to the employees at Dep. Y therefore this question has been removed from the survey.

### **C. Question 1: Do you know what the meaning of the term WD is, and what does it imply?**

A brief answer of the "translation" of WD is enough to have answered this question correctly. For the second part of the question, what the meaning of WDs implies, the respondent must have given at least a correct short note, such as "damage occurring at the warehouse" or "damage inflicted by customer". Seven of the respondents have given a complete answer that would show that they understand the full picture of WDs. In utopia, all answers should be in the Yes column, and none in the No column.

Do you know what the meaning of the term WD is?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	0	7	0	1	1
Do you know what the meaning of WD implies?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	0	5	2	0	2

Table 1 WD



### **C. Question 2: Do you know what the meaning of the term DD is, and what does it imply?**

A brief answer of the “translation” of DD is enough to have answered this question correctly. For the second part of the question, what the meaning of DDs implies, the respondent must have given at least a correct short note, such as “damaged product in transport” or “damage not inflicting a cost at the warehouse”. Seven of the respondents have given a full answer that would show that they understand the full picture of DDs. In utopia, all answers should be in the Yes column, and none in the No column.

Do you know what the meaning of the term DD is?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	0	7	0	1	1

Do you know what the meaning of DD implies?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	0	6	1	0	2

Table 2 DD

### **C. Question 3: Whose responsibility is it to report and remove damaged products?**

The definition of what consists a correct answer is in accordance with management’s view on whose responsibility it is to report and remove damaged products. When correct answers were given, the respondent’s answer is counted in the Yes column. In utopia, all answers should be in the Yes column, and none in the No column.

Correct answers of whose responsibility it is, as specified by management, are:

- if damaged product arrives in delivery FL
- if damaged product is in the store All employees; FL, PJ, CS, S
- if damaged product is in CS area FL, PJ, CS
- if damaged product is in the external warehouse FL, P

Whose responsibility is it to report and remove damaged products?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No

-if damaged product arrives in delivery					
2	0	7	0	2	0
-if damaged product is in the store area					
1	1	5	2	1	1
-if damaged product is in CS area					
1	1	7	0	1	1
-if damaged product is in the external warehouse					
--	--	7	0	2	0

Table 3 Responsibility to report and remove damaged products

Comments concerning Question 3:

PJ personnel

2 out of 2 respondents answered the first question correctly, that it is the responsibility of the forklift operators/logistics employees to report and remove delivery damages. As for the second question, one of the respondents have answered that it is the responsibility of the personnel in the department where the damaged good is, this is considered to be a wrong answer since it is all employees responsibility to remove a damaged good if they see it in the store. The second employee has answered the one who spots it which is considered to be the right answer. The answer to question three; the responsibility over damaged products in the CS area has received two different answers. The entirely correct one, that it is the joint responsibility of FL, PJ and CS, was answered by 1 respondent. The other respondent answered that it was the responsibility of the CS personnel. As for the last question; number four, both respondents have answered that the responsibility lies at logistics personnel or “those working at the external warehouse”. These answers have been interpreted as correct.

FL personnel:

Concerning question one, all respondents have answered correctly. The answers were both logistic personnel, the one who unloads the goods and the ones who detects it. All these answers have been considered correct. The correct answer to question two would be that it is the joint responsibility of all employees at the warehouse or that it is the responsibility of the one that discovers the damage. 5 respondents have answered in this manner. The remaining 2 respondents had answered the personnel or the one who is refilling which has been considered wrong. Question three is correctly answered if the respondent has made it clear that it is a joint responsibility. All of the employees had answered that it's a joint responsibility or that it is the one that detects it that shall report it. Both these answers are correct. Question four is answered correctly if the answer is “those working at the external warehouse”, “the one detecting the damage” or “FL personnel and P personnel”. Incorrect answers are “employees”, “personnel” only answering “FL operators”, or failing to give any answer at all. All of the respondents answered either the one who works there or the one that detects it.

CS personnel:

Regarding the first question, the respondents had answered that it's the responsibility of the logistic personnel which is the correct answer. The correct answer to the second question would be all personnel or the one that detects it. Here one of the respondents had answered simply "personnel" which was not considered a correct answer. At the third question one of the respondents had answered "personnel". This was not considered correct since the right answer would be joint responsibility between PJ, FL and CS or the one that detects it. The last question was not of relevance for the CS personnel.

#### **C/M. Question 4: If the cost of WDs and DDs is reduced, who will take part of the saving?**

Measured as the number of correct answers. Yes= correct answer.

As management claims, the cost savings will result in more money for the entire warehouse budget, resulting in higher salaries and more working hours for all kinds of personnel. Five of the respondents have given a full answer to the question, suggesting they understand the entire process of where cost savings end up. However, to have answered the question correctly, it was enough that respondents answered something short, but accurate, like "it goes back to the warehouse", "it goes to salary increases" or "less costs will lead to higher salaries".

If the cost of WDs and DDs is reduced, who will take part of the saving? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
2	0	3	4	0	2

Table 4 In case of cost reductions in WDs and DDs, who gains.

#### **C. Question 5: Does the warehouse have an insurance covering the cost of damaged products?**

Measured as the number of correct answers.

Management's answer to this question is that there exists no such insurance. Therefore, if respondents have answered No to this question, they have a correct answer, thus resulting in ending up in the Yes column. If they have answered Yes or Do not know, the answer is incorrect, thus resulting in ending up in the No column.

Does the warehouse have an insurance covering the cost of damaged products? #of respondents					
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
0	2	3	4	0	2

Table 5 Insurance covering the cost of damaged products.

### **C. Question 6: Do you regularly read the information notice board at Dep. X?**

In this question, Yes or No simply presents whether or not the respondents read the notice board. Thus, no answer is correct, but this is an attitude question.

Do you regularly read the information notice board at Dep. X?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
-	-	4	3	1	1

Table 7 Information notice board

### **W. Question 7: Do you think that you have got too much work to do for the time at hand to perform the work?**

In this question, Yes or No simply presents whether or not the respondents think they have got too many work tasks, considering the time they have at their disposal to conduct them. Thus, no answer is correct, but this is an attitude question.

Do you think that you have got too much work to do for the time at hand to perform the work?					#of respondents
CS		FL		PJ	
Yes	No	Yes	No	Yes	No
1	1	1	6	0	2

Table 8 Amount of work versus time to perform it

## Appendix 10 Investigation of Damage Levels at Dep. X; Results

This investigation was conducted 2008-10-09 and 2008-10-10. The findings are compiled into Table 1 for the store area, Table 2 for the CS area, and Table 3 for totals.

STORE AREA Dep. Y					
Time	Day 1, 2pm	Day 1, 7pm		Day 2, 10am	
Product name	Type of damage	Same	Recovered	Same	Recovered
		condition		condition	
P1	Minor	-	X	-	-
P2	Messy	X	-	-	X
P3	Minor	X	-	-	X
P4	Minor	X	-	-	X
P5	Minor	X	-	-	X
P6	Large	-	X	-	-
P7	Messy	X	-	-	X
P8	Messy	X	-	-	X
P9	Minor	X	-	X	-
P10	Minor	X	-	X	-
P11	Minor	X	-	X	-
P12	Minor	X	-	X	-
P13	Messy	-	X	-	-
P14	Messy	-	X	-	-
P15	Minor	X	-	X	-
P16	Minor	X	-	X	-
P17	Minor	X	-	-	X
P18	Minor	X	-	-	X
P19	Minor	X	-	-	X
P20	Minor	X	-	X	-
P21	Minor	X	-	X	-
P22	Minor	X	-	X	-

<b>P23</b>	Minor	X	-	X	-
<b>P24</b>	Minor	X	-	X	-
<b>P25</b>	Minor	X	-	X	-
<b>P26</b>	Messy	-	X	-	-
<b>P27</b>	Messy	-	X	-	-
<b>P28</b>	Messy	-	X	-	-
<b>P29</b>	Minor	X	-	X	-
<b>P30</b>	Minor	X	-	X	-
<b>P31</b>	Minor	X	-	-	X
<b>P32</b>	Minor	X	-	-	X
<b>P33</b>	Minor	X	-	-	X
<b>P34</b>	Minor	X	-	X	-
<b>P35</b>	Messy	X	-	-	X
<b>P36</b>	Messy	X	-	X	-
<b>P37</b>	Messy	X	-	X	-
<b>P38</b>	Messy	X	-	X	-
<b>P39</b>	Messy	X	-	X	-
<b>P40</b>	Minor	X	-	X	-
<b>P41</b>	Minor	X	-	X	-
<b>P42</b>	Minor	X	-	X	-
<b>P43</b>	Minor	X	-	X	-
<b>P44</b>	Minor	X	-	X	-
<b>P45</b>	Minor	X	-	X	-
<b>P46</b>	Minor	X	-	X	-
<b>P47</b>	Minor	X	-	X	-
<b>P48</b>	Minor	X	-	X	-
<b>P49</b>	Minor	X	-	X	-
<b>P50</b>	Minor	X	-	X	-
<b>P51</b>	Large	X	-	X	-

<b>P52</b>	Messy	-	X	-	-
<b>P53</b>	Messy	-	X	-	-
<b>P54</b>	Minor	X	-	X	-
<b>P55</b>	Messy	X	-	X	-
<b>P56</b>	Messy	X	-	X	-
<b>P57</b>	Messy	X	-	X	-
<b>P58</b>	Minor	X		X	-
<b>P59</b>	Minor	X		X	-
<b>Total day 1</b>	59	50	9		
<b>Total day 2</b>				37	13
				Same condition	Recovered
<b>TOTAL</b>	59			37	22

Table 1 Store Area

<b>CS AREA Dep. X</b>					
<b>Time</b>	Day 1, 2pm	Day 1, 7pm		Day 2, 10am	
<b>Product name</b>	Type of damage	Same condition	Recovered	Same condition	Recovered
<b>P60</b>	Minor	-	X	-	-
<b>P61</b>	Messy	X	-	X	-
<b>P62</b>	Minor	X	-	X	-
<b>P63</b>	Minor	X	-	X	-
<b>P64</b>	Minor	X	-	X	
<b>P65</b>	Minor	X	-	X	-
<b>P66</b>	Minor	X	-	X	-
<b>P67</b>	Minor	X	-	-	X
<b>P68</b>	Minor	X	-	X	

<b>P69</b>	Minor	X	-	X	-
<b>P70</b>	Minor	X	-	X	-
<b>P71</b>	Minor	X	-	X	-
<b>P72</b>	Minor	X	-	X	-
<b>P73</b>	Messy	X	-	X	-
<b>P74</b>	Messy	X	-	X	-
<b>P75</b>	Minor	X	-	X	-
<b>P76</b>	Minor	X	-	X	-
<b>P77</b>	Minor	X	-	X	-
<b>P78</b>	Minor	X	-	X	-
<b>P79</b>	Minor	X	-	X	-
<b>P80</b>	Minor	X	-	X	-
<b>P81</b>	Minor	X	-	X	-
<b>P82</b>	Minor	X	-	X	-
<b>P83</b>	Minor	X	-	X	-
<b>P84</b>	Minor	X	-	X	-
<b>P85</b>	Minor	X	-	X	-
<b>P86</b>	Minor	X	-	-	-
<b>P87</b>	Minor	X	-	-	-
<b>P88</b>	Messy	X	-	X	-
<b>P89</b>	Minor	X	-	X	-
<b>P90</b>	Minor	X	-	X	-
<b>P91</b>	Minor	X	-	X	-
<b>P92</b>	Minor	X	-	X	
<b>P93</b>	Minor	X	-	-	X
<b>P94</b>	Minor	X	-	X	-
<b>P95</b>	Minor	X	-	-	X
<b>P96</b>	Minor	X	-	X	-
<b>P97</b>	Minor	X	-	X	-



<b>P98</b>	Minor	X	-	X	-
<b>P99</b>	Large	X	-	X	-
<b>P100</b>	Minor	X	-	-	X
<b>P101</b>	Minor	X	-	X	-
<b>P102</b>	Minor	X	-	X	-
<b>P103</b>	Minor	X	-	X	-
<b>P104</b>	Minor	X	-	X	-
<b>P105</b>	Minor	X	-	X	-
<b>P106</b>	Minor	X	-	X	-
<b>P107</b>	Minor	X	-	X	-
<b>P108</b>	Minor	X	-	-	X
<b>P109</b>	Minor	X	-	X	-
<b>P110</b>	Minor	X	-	X	-
<b>P111</b>	Minor	X	-	X	-
<b>P112</b>	Minor	X	-	X	-
<b>P113</b>	Minor	X	-	X	-
<b>P114</b>	Minor	X	-	X	-
<b>Total day 1</b>	55	54	1		
<b>Total day 2</b>				49	5
				Same condition	Recovered
<b>TOTAL</b>	55			49	6

Table 2 CS Area

WAREHOUSE X	SAME CONDITION	RECOVERED
<b>Total 104 ( 59+55)</b>	86 (37+49)	28 (22+6)

Table 3 Totals

## Appendix 11 Investigation of Damage Levels at Dep. Y; Results

This investigation was conducted 2008-11-06. The findings are compiled into Table 1 for the store area, Table 2 for the CS area, and Table 3 for totals.

STORE AREA Dep. Y			
Time	Day 1, 10am	Day 1, 4pm	
Product name	Type of damage	Same condition	Recovered
Y510	Minor	X	-
Y511	Large	X	-
Y512	Large	X	-
Y513	Messy	X	-
Y514	Messy	X	-
Y515	Messy	-	X
Y516	Large	-	X
Y517	Minor	X	-
Y518	Minor	X	-
Y519	Messy	X	-
Y520	Messy	X	-
Y521	Messy	X	-
Y522	Minor	X	-
Y523	Large	X	-
Y524	Large	X	-
Y525	Messy	-	X
Y526	Messy	-	X
Y527	Minor	X	-
Y528	Minor	X	-
Y529	Messy	X	-
Y530	Messy	X	-
Total	21	17	4

Table 1 Store Area

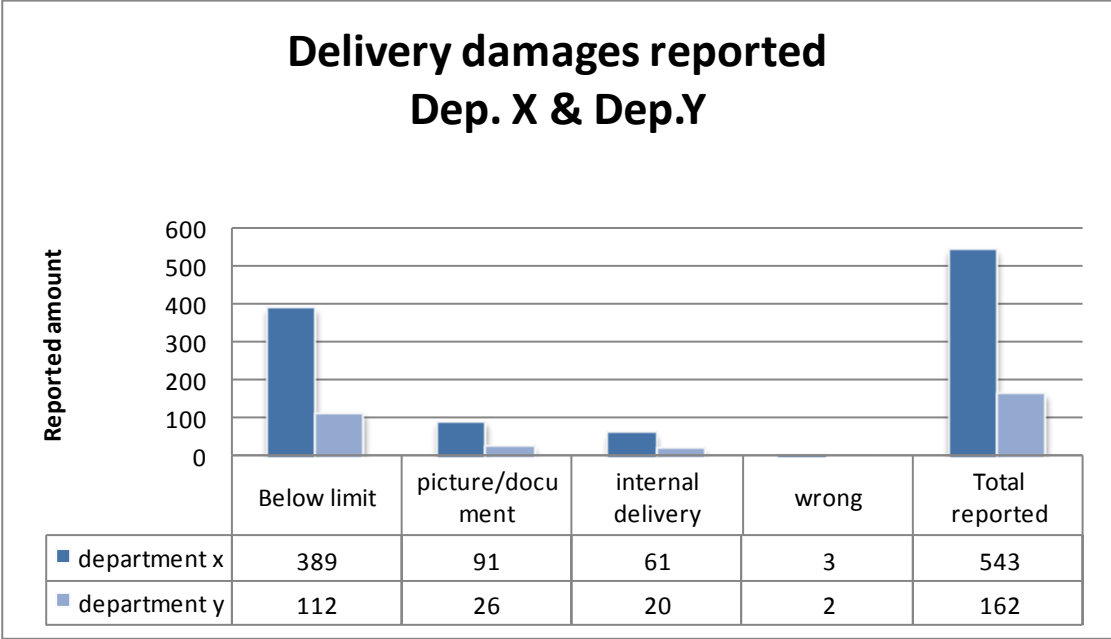
CS AREA Dep. Y			
Time	Day 1, 10am	Day 1, 4pm	
Product name	Type of damage	Same condition	Recovered
Y260	Minor	-	X
Y261	Messy	X	-
Y262	Messy	X	-
Y263	Messy	X	-
Y264	Large	X	-
Y265	Messy	-	X
Y266	Messy	X	-
Y267	Minor	X	-
Y268	Minor	X	-
Y269	Messy	X	-
Y270	Messy	X	-
Y271	Minor	X	-
Y272	Minor	X	-
Y273	Messy	X	-
Y274	Messy	X	-
Y275	Large	X	-
Y276	Large	X	-
Total	17	15	2

Table 2 CS Area

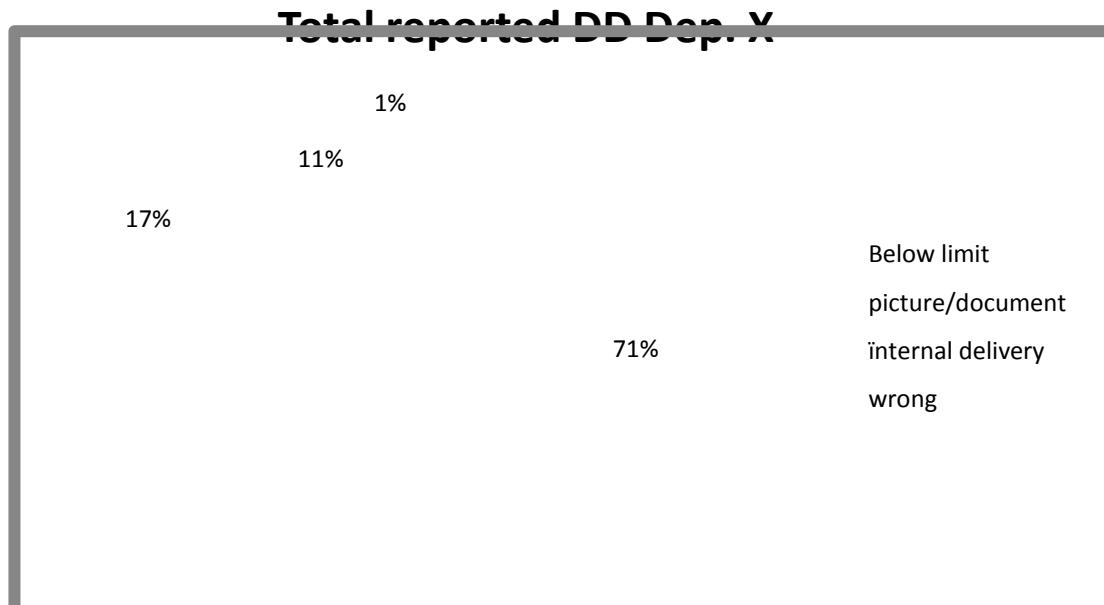
WAREHOUSE Y	SAME CONDITION	RECOVERED
Total 38 ( 21+17)	32 (17+15)	6 (4+2)

Table 3 Totals

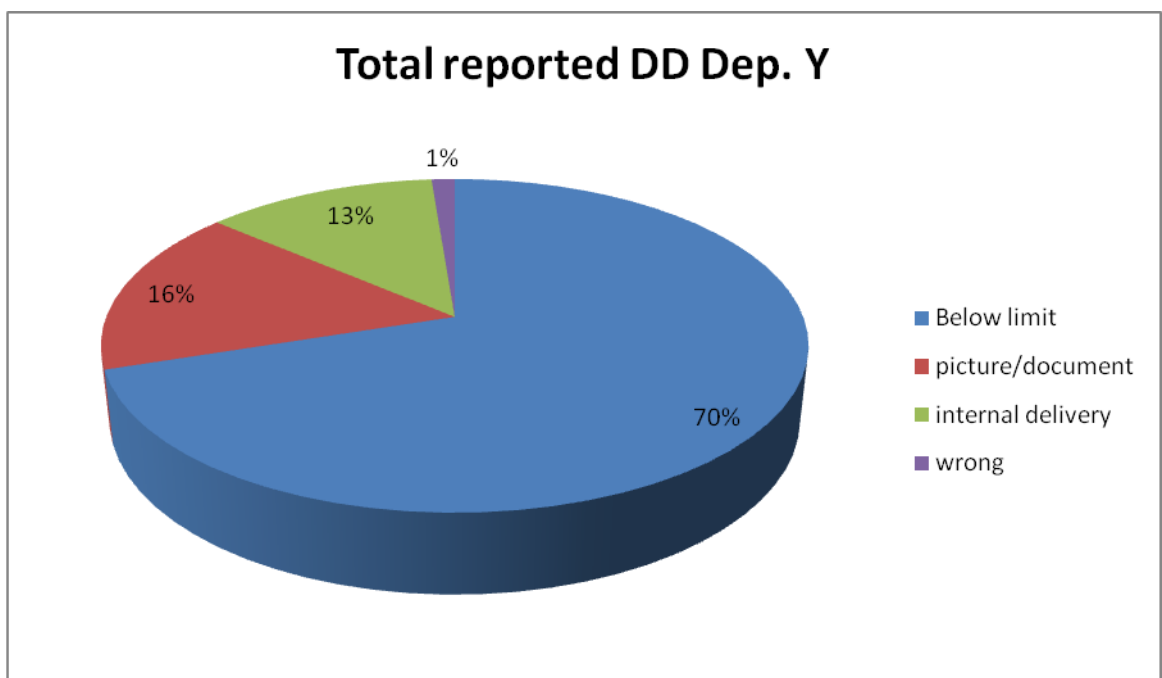
**Appendix 12 DD Reporting - Comparison of Dep. X and Dep. Y**



Dep. X and Dep. Y are compared against each other on this chart. Like one can see, Dep. X is better than Dep. Y in reporting delivery damages.



This pie chart shows how the total reported DDs for Dep. X and how it is divided.



This pie chart shows how the total reported DDs for Dep. Y and how it is divided.

When comparing the both pie charts you can see that they are similar to each other, meaning that the both Dep. are equally efficient even that Dep. X reports the most.