CHALMERS

Improvements of Physical Distribution Service within Relationships with Intermediaries

– A Case Study of Xylem

Erik Asker,	910222-5134
Anton Dahlström,	900314-0317
Alexandra Lundin Säterberg,	900105-3785
Malin Månsson,	890419-2906
Anna Teiwik,	900806-3704
Simon Wessberg,	910513-5397

Technology Management and Economics
Industrial Marketing
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg Sweden 2013

Bachelor Thesis TEKX04-13-08

Abstract

The physical distribution service is today viewed as a value adding activity, since the value of a product is no longer defined just by the product itself, but also by the services provided with the product. How to affect the physical distribution service has become an important field of study, and is the focus of this thesis. Xylem, a company with a strong sustainable profile, is a global supplier of water pumps with production in Sweden that faces challenges in this field. Xylem communicates to end customers through different sales companies, while third-party logistics providers, TPLs, perform the physical distribution. However, Xylem has, within these relationships, experienced problems with sharing information, resulting in customers complaining about delivery deviations. Hence: "*The purpose of this thesis is to analyze how a company can improve its physical distribution service, as well as their sustainable profile, when the improvements cannot only be performed by the company itself, but are also dependent on other companies acting as intermediaries."*

A problem analysis was performed to investigate the purpose, which led to four research questions that formed the base of the analysis. In order to fulfill the purpose empirical data was collected through interviews with Xylem, sales companies and TPLs; a literature study was also performed to create an analytical framework to analyze the empirical data, with four areas of investigation: business relationships, information flow, customer service and sustainability.

A relationship between a company and a TPL can be seen as a facilitative relationship, which implies limited dependency and adaptations between them. The analysis concludes that TPLs are of strong importance for the end customers' satisfaction and therefore for the producing company. The relationship between a producing company and a TPL does therefore not currently correspond to its actual importance. In order to improve the physical distribution service, the relationship should be considered more important and have a more integrative approach. This could lead to increased incentives for a TPL to adapt standardized ways of sharing information. The physical distribution service can also be improved by reducing the complexity of the information flow. The TPLs should communicate directly with the sales companies, instead of just with Xylem, in order for the sales companies to be able to provide information more efficiently, and of higher quality, to the end customers.

As of the situation today, Xylem does not seem to consider the TPLs' sustainable profile as a part of their own in the extent that they should. The work with sustainability is a part of the total service and must therefore extend beyond the scope of the single company. The pursuit towards sustainability within a business relationship can be strengthened through both private regulations and cooperation. It is also important to communicate the vision of sustainability to all connected actors, in order to utilize the benefits of working towards sustainability.

Sammandrag (Abstract in Swedish)

Idag ses den fysiska distributionsservicen som en värdeskapande aktivitet, då värdet av produkter inte endast definieras av själva produkten, utan inkluderar även tjänster kring produkten. Hur den fysiska distributionsservicen kan påverkas har blivit ett viktigt område för forskning, och är fokus för denna uppsats. Xylem, ett företag med stark hållbarhetsprofil, är en global leverantör av vattenpumpar, med produktion i Sverige som står inför utmaningar inom detta område. De kommunicerar med slutkunder via olika säljbolag, medan det fysiska flödet av produkter går genom tredjepartsleverantör, TPL. Dock har Xylem inom dessa relationer med sina mellanhänder haft problem med att få information om leveransavvikelser, vilket har gett upphov till kundklagomål. Detta har lett fram till rapportens syfte: "*Syftet med denna uppsats är att analysera hur ett företag kan förbättra sin fysiska distributionsservice och sin hållbarhetsprofil, då dessa förbättringar inte endast kan utföras av företaget självt, utan även är beroende av andra företag som agerar som mellanhänder.*"

En problemanalys gjordes för att undersöka syftet, vilket ledde fram till fyra forskningsfrågor som senare diskuteras i analysen. För att kunna uppfylla syftet samlades empirisk data in genom intervjuer med Xylem, säljbolag och TPLs. En litteraturstudie gjordes för att skapa ett analytiskt ramverk, med fyra litteraturområden; affärsrelationer, informationsflöde, kundservice och hållbarhet, i stånd att analysera de empiriska data.

En relation mellan ett företag och en TPL kan ses som en facilitative relation, vilket innebär ett begränsat beroende och begränsade anpassningar mellan dem. Analysen visade att TPLs har en viktig betydelse för att göra slutkunder nöjda, vilket gör att TPL är av viktig betydelse för det producerande företagets verksamhet. Graden av samarbete mellan ett producerande företag och en TPL motsvarar därför, för närvarande, inte denna faktiska betydelse. För att förbättra den fysiska distributionsservicen bör relationen ses som mer betydande och bör innebära en mer integrerad strategi. Detta skulle innebära ökade incitament för TPLs att anta standardiserade informationsdelningsmetoder. Den fysiska distributionsservicen kan också förbättras genom att minska komplexiteten av informationsutbytet. Säljbolagen borde hantera mer av informationsdelningen med TPLs istället för att gå genom Xylem för att därigenom uppnå en snabbare och mer kvalitativ informationsdelning till slutkunderna.

Arbetet med hållbar utveckling bör sträcka sig utöver det enskilda företaget för att ses som en del av den totala tjänsten. Som situationen är idag, kan strävan mot hållbarhet stärkas genom både privat reglering och samarbete. Det är också viktigt att förmedla visionen om hållbarhet till alla anslutna aktörer, i syfte att utnyttja fördelarna med att arbeta mot hållbarhet.

Acknowledgements

The thesis has been written at Chalmers University of Technology during the spring semester of 2013. It is the last part of the bachelor at the Industrial Engineering and Management program, and it was written at the department of Industrial Marketing.

Xylem gave us the opportunity to conduct this thesis, and provided with an interesting area of focus during the whole process; special thanks to Matilda Wallergård, Shipping Department Manager, and Linda Martinsson, Project Manager Group Logistics, at Xylem for supervising us. Also, we would like to thank all of the people interviewed who shared important information and thoughts.

Finally, we would like to thank our supervisor Lars Bankvall, PhD in Industrial Marketing at Chalmers University of Technology. Without his help and support neither the working process nor the result would have been the same.

Gothenburg, 2013-05-07

Glossary

Delivery precision	The percentage of how often deliveries are performed in time.
Distribution center	A center that stores products before shipment and from which the products are distributed.
EDI system	Electronic Data Interchange system; a standardized way of sharing information between companies.
End customer	Customer which aims to use the product and do not sell it forward.
Integration	The level of cooperation, adaptation and communication within a relationship between companies.
Interdependency	What happens in one relationship influences what is going on in another relationship. All relationships within a network affect each other.
Intermediary	A company which provides services between at least two other companies.
Key account manager	A position within a company that works with the company's key customers.
Sales Company	Companies that handle the contact with end customers and sell a producing company's products.
Timeliness	Measurement on whether deliveries are on time or not.
TPL	Third-Party Logistics provider: company providing transportations and logistics services

Table of contents

1 Introduction

This chapter will provide a background to the thesis with the intention of giving an understanding of the chosen subject. The background will be followed by the purpose of this thesis. The purpose will then be discussed in a problem analysis, where four research questions are presented, upon which further analysis will be based.

1.1 Background

Xylem Water Solutions is a company operating in the business of water transportation and treatment, where they have a market leading position. The company has a strong profile of sustainability, which comes naturally from the close relationship between water and aspects such as health & safety and energy consumption. Their core business is the manufacturing of products related to handling water, such as water pumps of various sizes and applications. Some of these water pumps are produced in Emmaboda, Sweden, and this site will be the main focus of this thesis. When the name Xylem is used, it will be referred to the site in Emmaboda, Sweden. The pumps manufactured on the site in Emmaboda are distributed globally to various markets where Xylem is active. Because of the heavy payload of the pumps, as well as the fact that they operate on a global market, Xylem has need for a fairly extensive system of distribution. To accomplish this, Xylem has employed the services of a number of third-party logistics providers, TPLs, which perform the transports. These providers utilize all means of transportation commonly in practice, such as transportation by plane, truck, rail or boat. Which combination of provider and mode of transport that is used depends on the type of goods, the destination as well as the criticality of the shipment. Another aspect of Xylem's business, which also comes as a consequence of that they operate on the global market, is the use of sales companies in different markets. These companies are responsible for most tasks regarding customer interaction in their respective markets; sometimes they will also be the receiver of the transports sent from Emmaboda, although the many of the transports are sent directly to the end customer. One of Xylem's policies states that these companies should carry minimal stock, with the exception of spare parts. This policy further increases the need for a well-functioning system of distribution, as the products cannot be shipped directly from a warehouse located at the sales companies.

Each TPL is responsible for all the transports from Xylem to an assigned geographical area. When a shipment is needed, Xylem contacts the responsible TPL and makes the appropriate preparations, e.g. produce shipping documents. The shipment is usually booked as soon as the manufacturing of the product starts, and the product is then shipped to its destination by the assigned TPL. After the goods have left Xylem's facilities, the control of the deliveries is handed over to the TPL. Although the information regarding the deliveries sometimes is provided to the receiving party, it is mostly sent to Xylem only. By standard, the information about deliveries is not passed along to any third party, i.e. to a party that is neither the shipper nor the receiver. In the case when sales companies are merely the broker of the sale and not the receiver of the shipment, the information about the shipment is usually not communicated to this sales company.

Figure 1.1 TPL shipping the goods from Xylem to end customer

The information exchange between Xylem and their end customers is mainly performed via the various sales companies. Therefore, Xylem mostly does not have direct contact with their end customers, and instead defines the sales companies as their main customers. The information from the

end customers will thereby not always reach Xylem, as most of the information that is transferred regard sales or deliveries of products. When handling complaints from customers, regarding late deliveries, the sales companies receive the complaints and then, in some cases, forward this information to Xylem. This may be an altered version of the initial complaint or an aggregation of several complaints because of the second-hand nature of this communication. However, not all complaints are sent to Xylem, as there are no routines mandating these transactions. Even though the sales companies are Xylem's main customers, the concern of dissatisfied end customers is nonetheless still prominent, as the sales companies themselves, in turn, strive toward satisfied customers.

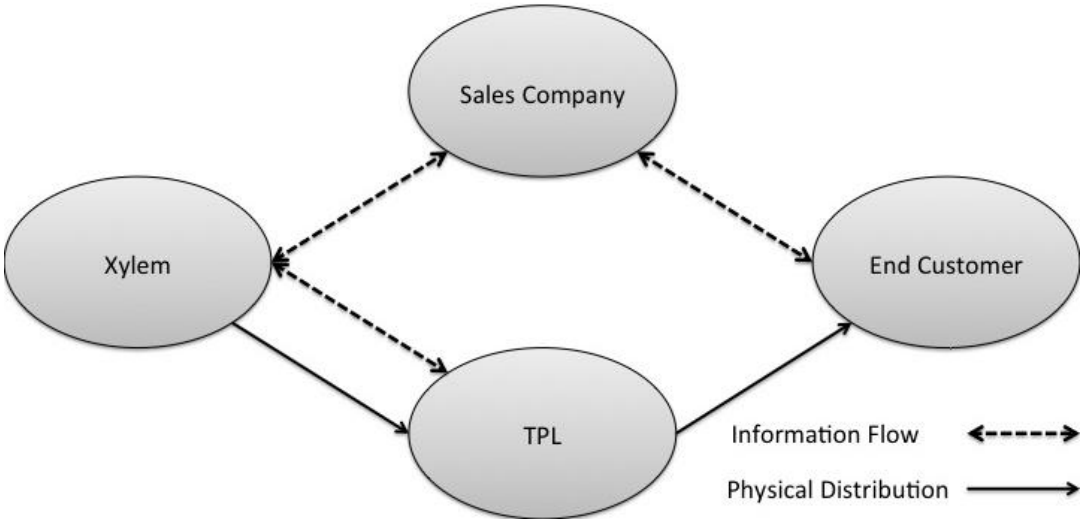


Figure 1.2 The dashed arrows represent the exchange of information between Xylem, the TPL, the sales company and the end customer. The solid arrows illustrate the physical distribution flow of products; directly from Xylem to end customer

In relation to the context described above, Xylem experiences a problem: their end customers are not satisfied with the timeliness of deliveries. Xylem was initially taken somewhat by surprise by this, as the company, according to their own measurements, has such a high level of delivery precision that it should not be a cause of concern for most of their customers. The disparate understanding of the delivery precision is by Xylem considered to be an important issue, as it has an effect on the competitiveness of the company. The value of the products perceived by the customer does not only depend on the product itself, but also in the services surrounding the product. Included in these services is the handling of the transports, and the services linked to the distribution of the products, which can be defined as the physical distribution service. The physical distribution service is of importance because "The quality of the physical distribution service industrial purchasers receive from suppliers has been shown to be an important consideration in industrial purchasing decisions" (Bienstock et al., 1997). According to Emerson, timeliness is included in the physical distribution, along with information (1996). Both of these aspects can be linked to the described current situation of Xylem. The level of physical distribution service that Xylem provides, besides the actual product itself, influences how the end customer perceives the value of the total offer. Xylem therefore considers this issue a business risk in the long run: having dissatisfied customers might negatively impact Xylem's ability to retain their customers and, by consequence, their market position.

Another aspect of the perceived value of the total offer is the sustainability of Xylem's operations; this is a result of Xylem's sustainable profile. Xylem states that sustainability is an integral part of the company on every level and is something that comes naturally from their goal to "Solve Water". Xylem further states that the company has the appropriate characteristics to pursue the development within this field, which comes as an effect of their global operations. This orientation is important to Xylem, but if handled erroneously it might cause harm to the company. Xylem is dependent on other companies to maintain and improve their sustainable profile.

Because of Xylem's distribution process to end customer, where several companies are involved and provide their respective services, the control over the process does not lie with Xylem alone. All companies involved have an impact on the final product and sustainability of operations; if one actor fails to live up to their agreements, the effects are immediate. This has direct effects on the perceived physical distribution service from the end customers' perspective. Xylem is thereby dependent on their partnering companies, which act as intermediaries, something that comes naturally from the outsourcing of processes from Xylem to these connected partners.

1.2 Purpose

The purpose of this thesis is to analyze how a company can improve its physical distribution service, as well as their sustainable profile, when the improvements cannot only be performed by the company itself, but are also dependent on other companies acting as intermediaries.

1.3 Problem Analysis

To be able to answer the purpose of this thesis, specific research questions, each aiming to present different aspects of the purpose, will be formulated. A discussion that results in these research questions will be presented in the following paragraphs.

Xylem experiences that their end customers are dissatisfied with the timeliness of deliveries provided by Xylem. However, Xylem has good knowledge of their products prior to shipping them, but they do not entirely follow up the shipments nor provide the physical distribution service that the customers request. If a producing company is focused solely on the service prior to shipping, the case may be that the customer is not satisfied without the producer knowing, because of problems arising during the delivery process (Coyle et al., 2003). When distributing a product on the market there are components and services included in an offering that are not only affected by the company itself (Kemppainen et al, 2003). In Xylem's case, the offering to end customers is affected by the service of the TPLs and the sales companies. The TPLs handle the transports and their subsequent services are included in the service provided to end customers. The sales companies provide a link of communication between Xylem and their end customers, as well as providing additional services. The TPLs and sales companies will therefore be seen as intermediaries, bridging the gap between Xylem and their end customers. Thus, the physical distribution service provided by Xylem to end customer can be affected by these intermediaries. Since the intermediaries function as independent companies, Xylem has no possibility of fully controlling these partner companies, further complicating the situation. Consequently, the process of maintaining and improving upon the physical distribution service, which is affected of the performance of the intermediaries, becomes more difficult.

The fact that Xylem is heavily dependent on the companies acting as an intermediaries leads to that an analysis solely from the perspective of Xylem as the single firm is not being sufficient in order to answer the purpose. Therefore, it is of interest to analyze the connections that exist between a company and the intermediaries that affect the service provided to end customers. In this analysis, these intermediaries will be the TPLs handling the transports, and the sales companies that handle the information exchange with end customers.

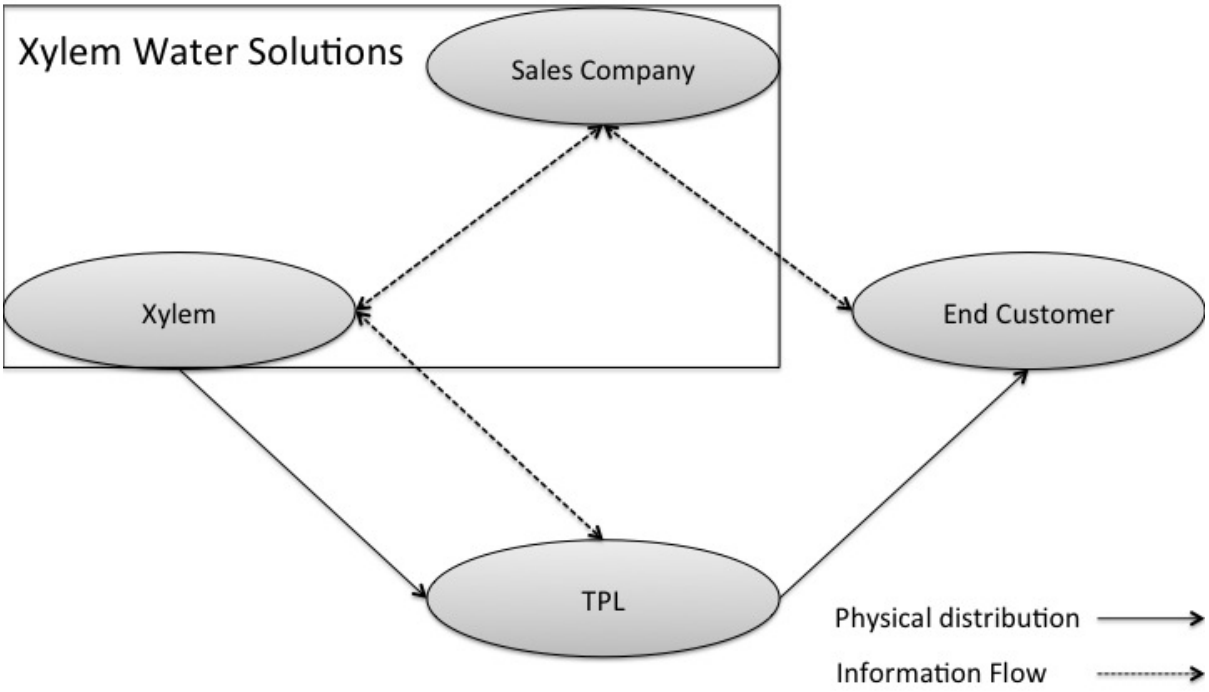


Figure 1.3 This picture shows the information flow and physical distribution of products, from Xylem to their end customers

Using TPLs is beneficial for a multinational company in order to distribute the products more efficiently since the companies can focus on their core business (Hertz et al, 2003). Depending on the needs of the producing company, in this case Xylem, some TPLs would be more beneficial to use than others. However, the TPLs have to perform according to the predetermined agreements in order to retain Xylem as a satisfied customer. If a situation occurs where the performance of a TPL is subpar, Xylem might consider opportunities of switching to another provider. It is therefore in the interest of the TPL to perform well. At the same time Xylem is dependent on the TPLs provided services in order to satisfy their end customers. Thus the two companies are dependent on each other's activities.

The sales companies Xylem uses also affect the physical distribution service. The sales companies act as independent companies within the organization of Xylem Water Solutions. The fact that they are independent companies means that they, when handling an order from end customer, are seen as the direct customer to Xylem. This is the case regardless of if the sales companies store products on their way to the end customer, or if they just handle the order from the end customers. If a situation occurs where the sales companies lose customers due to poor performance, it affects Xylem directly. Likewise, if Xylem provides poor products or services, it affects the sales companies' relationships with the end customers. The fact that Xylem and the sales companies both operate within Xylem Water Solutions is one reason that the connection between Xylem and their sales companies is stronger than that of Xylem and the TPLs; Xylem and their sales companies are more dependent on the actions of the other party, and it is therefore essential that this connection functions properly. Even though Xylem and the sales companies are parts of Xylem Water Solutions, with respect to the information flow between the parties, it can be seen as an intermediary toward the end customer.

The dependency between a company and another company acting as an intermediary to the end customer can be pictured as a connection between the companies, which might differ dependent on how they interact and how important they are for each other's performance. The level of adaptation and integration between the connected companies define the possibilities of change and improvement within this certain connection. This connection between two companies is unique and dynamic, and can be seen as a specific business relationship between these companies. The relationship between two companies is a crucial factor for the possibilities of cooperation between them; this is the interface

where conflicts may arise, but it is also where mutual benefit can be identified. This relationship therefore also decides what can be done within the same relationship to improve the physical distribution service offered to end customers.

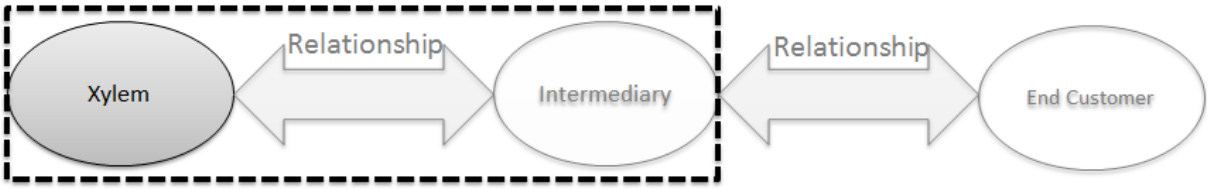


Figure 1.4 The focus is on the relationship between Xylem and their intermediary

It is important to highlight that even if the focus is on the relationship between a company and an intermediary in this thesis, the function of an intermediary is to mediate the services between at least two different parties, thus working between two companies in order to forward services or products from the supplier to the buyer. Therefore, in this case, it is important to always have the end customers in mind and that what affects them happens in these relationships, especially since the purpose is to improve the physical distribution service for the end customers. However, in order to understand how a company can improve the physical distribution service, the business relationship between a company and an intermediary is of importance and must be examined. How these relationships take form and what aspects they contain, therefore provide a basis for the company's performance. This leads to the first research question of this thesis:

Research question 1: How can a business relationship between two companies be described, where one of the companies acts as an intermediary between the other company and an end customer?

In Xylem's situation, their relationships with the intermediaries involve issues with the exchange of information. Since the information provided to end customers can be seen as a part of the customer service (Emerson et al., 1996), Xylem's current situation impairs the physical distribution service for the end customer. This can, in part, be explained by the fact that Xylem's end customers recognize the late deliveries before Xylem themselves are aware of the problem. The issue concerning poor exchange of information is highly dependent on the timeliness of the information shared between Xylem and their intermediaries and is the base for the possibilities that Xylem has to inform their customers of delays.

Due to the fact that the exchange of information with the end customers always is transferred via the sales companies, Xylem never has direct contact with the end customers. Dependent on that the information regarding the deliveries is only communicated from the TPL to Xylem and only to some extent to the sales companies; the sales companies do not have the information regarding the deliveries needed. Relating to the timeliness of transports, and by consequence the physical distribution service offered by Xylem, a critical part of the information exchange is the part of the information regarding the deliveries. This information is collected by the TPL and communicated to Xylem, but is perceived by Xylem as lacking in quality. This perceived lack in information quality between Xylem and the TPLs result in that Xylem does not receive the information needed to handle the situations regarding delayed deliveries.

Figure 1.5 This picture shows that the information flow within the relationship between Xylem and their intermediary is in focus

Thus, in order to provide an explanation for how the physical distribution service may be improved, an analysis of the exchange of information and the quality of information within the business relationship between a single company, Xylem, and an intermediary, will be examined. The exchange of information and the information quality is a part of a wider term: information flow. The information flow within a business relationship consists of three different characteristics; information sharing, information quality and information technology (Vanpoucke et al., 2009). This information flow within a business relationship can take different forms and therefore the second research question is as follows:

Research question 2: How can the aspects of information flow be described within a business relationship between two companies, where one of them acts as an intermediary?

Both companies affect the information flow within a business relationship, i.e. a single company cannot change it themselves but are dependent on the other company's interests to change as well. However, even though the intermediaries, as in the case of Xylem, affect the information flow it is Xylem that experiences the problems with lack of information to end customers, and therefore it is Xylem that has the incentives to change the situation. Therefore, to be able to find a solution for Xylem to improve their physical distribution service, the analysis will shift its focus from that of a business relationship, to focus on the business relationship from the viewpoint of a single firm, in this case Xylem.

Figure 1.6 The perspective is now only from he view of a single firm

Regardless of that Xylem has the incentives to improve the physical distribution service; they are dependent on that the intermediaries have the possibilities to adapt their business to provide the required information. The business relationships that Xylem has with the intermediaries sets the foundation for the extent of which intermediaries are able to adapt to Xylem, which in turn implies to what extent Xylem's requirements can be met and what possibilities Xylem has to change their current information flow. In order to be able to analyze how a single firm, like Xylem, could influence the information flow from the intermediaries, it is necessary to base the analysis on the previous research questions, i.e. how Xylem's business relationships to the intermediaries take form and what aspects the information flow between the companies contains.

In order for a company to improve the physical distribution service, an analysis regarding how the information flow could be improved must therefore be done. Since the physical distribution service heavily relies on the operations of the connected intermediaries, the focus should be on the information flow within the business relationship that a company has with the intermediaries. In this sense, the problem at hand is not something that a company can solve in isolation; relationships with

other actors need to be taken into account. What possibilities a company has to influence the current information flow, have to be analyzed. Therefore, the third research question will be:

Research question 3: How can a company improve the information flow in relation to connected companies which act as intermediaries?

It is not only a better information flow that Xylem prioritizes within their relationships with the intermediaries. Because of Xylem's sustainability profile, this is also an important part of their business, of which they want to be associated with even in the future.

As discussed, the sustainable profile comes naturally because of the business areas in which Xylem operates, which are closely related to aspects of sustainability. If Xylem is associated with sustainability or not, depends naturally on their own actions, but also on the actions of connected business partners. It may be that Xylem views themselves as active within their work with sustainability, but this view may not be shared with their end customers, due to business partners not presenting the same level of commitment to sustainability. If Xylem focuses heavily on sustainability, but the intermediaries, whom Xylem cooperates with, do not focus on sustainability, the total offering to the end customer will not be as sustainable as originally intended. Likewise, it may be that the intermediaries have a strong sustainable mindset, and Xylem does not, and this case will have the same result. Therefore, it is obvious that, much like physical distribution service, maintaining a sustainable profile is dependent on the actions and interactions between different companies.

The different perceptions of sustainability in a business relationship can affect the perceived value of the product to the end customer, dependent on that their joint efforts constitutes the total offering. If the TPLs do not handle the transports well in terms of sustainability, the perceived value of the product for the end customer might be reduced. Therefore, it is essential for Xylem to include their TPLs in their work toward sustainability. If the issue of sustainability within the relationships with TPLs is handled poorly, it might cause harm to the company. Conversely, if sustainability is well developed within the business relationship, it might have positive impacts on both companies.

Furthermore, the intermediaries may also pursue a heightened sustainable profile, but experience that suppliers or other business partners not sharing the same values make this work more difficult. If one TPL actively works with developing more sustainable solutions to their customers, but the customers do not see this addition as valuable, the TPL will be hindered in its sustainable attempts. The same can be said for sales companies, which are dependent on the actions of its suppliers. If the end customers demand more sustainable solutions, but the sales companies are unable to deliver these products due to the sustainable profile of its supplier, then their sustainable profile is also negatively affected. By shifting the focus of sustainability from an isolated factor within a single company to that of the entire business relationship, new possibilities for improvement may arise. This type of work toward sustainability can be of benefit for both parties in this business relationship. This leads to the last research question of this thesis:

Research question 4: How can a company’s pursuit toward a sustainable business practice be supported through joint efforts in a business relationship?

2 Method

In this chapter the study design, data collection, and literature study will be discussed. Also, the way of conducting the study process, in order to fulfill the purpose of the thesis, will be explained. Methods regarding data collection and choice of study design will be introduced and motivated, and the study process will follow. In the end of the chapter a source evaluation will be discussed.

2.1 Study design

In order to answer the purpose, it can be divided into a number of research questions. To answer these research questions, and thereby also the purpose, a case study can be performed. (Gillham, 2010) The aim of such a case study is to investigate an individual or a group in its real life context in order to achieve a deep understanding (Woodside, 2010).

The data can be collected in two different ways in a case study: in a qualitative or a quantitative way. When deciding which one of them to use, it is essential to know what kind of data the study requires (Woodside, 2010). A qualitative method is the most primary option, and is a descriptive method, where the data collected needs to be interpreted and analyzed. This method gives a holistic picture and context (Gillham, 2010). A quantitative method does explain and analyze numerical data by using mathematical methods (Muijs, 2004). The qualitative method is particularly useful when developing theories, and when studying organizations (Savenye et al., 2005).

In order to answer the research questions of this thesis, a case study of Xylem was done. The chosen object of interest in this case study is Xylem, and their relationships with the intermediaries. The research method for the thesis chosen for this case study was the qualitative method, and was partly chosen because of the complex content where no experiments could be accomplished, and partly because of the answers to the research questions not being measurable or direct.

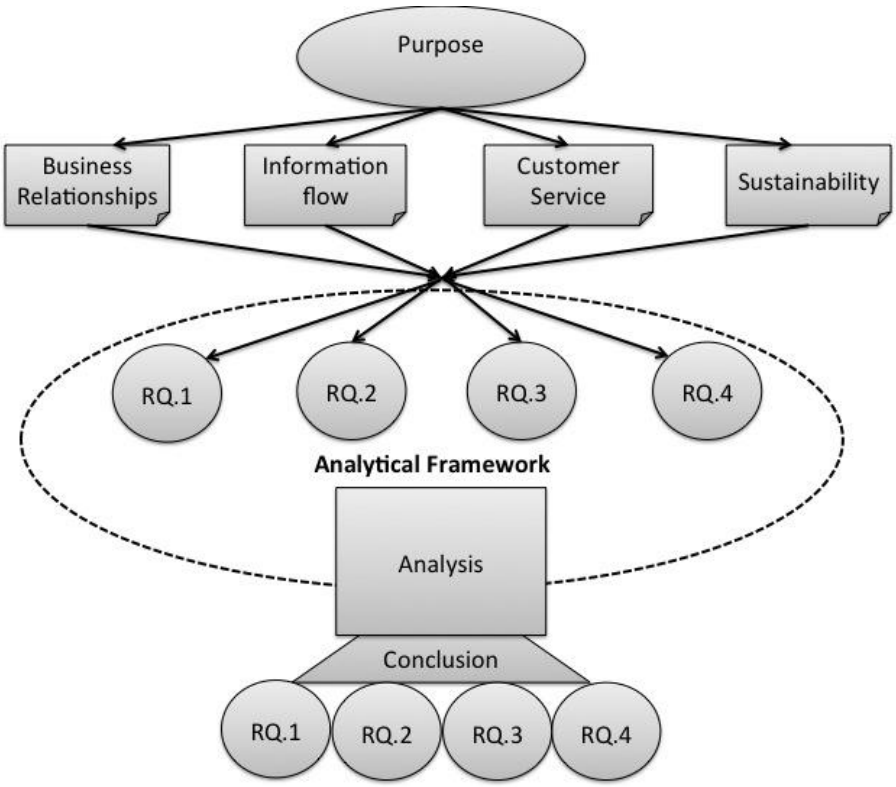


Figure 2.1 This picture illustrates the study process from the purpose to conclusions

2.2 Data collection

In order to give the study useful information to base on, data collected for the thesis should mostly be from primary sources (DiCicco-Bloom et al., 2006). To support the primary data, it is useful to also collect supplementary data, or secondary data (Bryman et al., 2003). The data for this thesis was mostly collected from primary sources, which means that the primary information was mostly collected through interviews. Also, supplementary data information was collected from websites, databases, articles and journals. This provided a better understanding regarding buyer-supplier relationships on the markets and information flows between actors. Other relevant data and information regarding Xylem were collected from websites, annual reports, presentation and interviews with employees at Xylem. Examples of statistical reports from TPLs were provided to us by Xylem. These were not allowed to be included in the report, but provided us with a picture of the content of such reports.

2.3 Literature study

A literature study was conducted in order to create an analytical framework. The literature study gave a comprehensive understanding of different theories and models in the four areas of investigation. The four areas chosen are business relationships and networks, information flow, sustainability, and customer service; this choice of literature areas will be justified in the analytical framework. From these four areas of investigation, four research questions were developed. The literature study resulted in an analytical framework that subsequently could be used as an analytic base for the discussion about the case of this thesis.

When collecting the information in order to create the analytical framework, each piece of literature was screened for relevance, where some literature was rejected according to irrelevance. The literature was then analyzed in order to create the final version of the analytical framework.

2.4 Interviews

Interviews are well-established research tools that can be executed at any point during the data collection process in order to fulfill different aims in the research (Cachia, 2011). There are plenty of different options to choose between when deciding which interview method to use when collecting data to a study. When choosing the qualitative method, interviews are often semi-structured, which means that the interviews are prepared with pre-written and open-ended questions as interview guidance (DiCicco-Bloom et al., 2006). The semi-structured way of doing interviews enables the chance to obtain as much information as possible, and to get useful information and answers (Cachia, 2011).

The interviews performed in this study were semi-structured with both closed and open-ended questions, in order to enable follow-up questions and a flexible interview method. All questionnaires are to be found in the Appendix. Interviews were performed with most of the TPLs that handle the transports from the site in Emmaboda. The questionnaires for these interviews can be found in Appendix II, and are called interviews with TPLs. Furthermore, interviews with employees within Xylem have been performed in order to understand the specific problem, and in the Appendix, these are referred to as interviews within Xylem. Sales companies have been interviewed as well. All interviews were handled via telephone, and complementary data were collected through email. These interviews are referred to as interviews with sales companies in Appendix ll.

2.4.1 Interviews within Xylem

Interviews with employees within Xylem were performed in the beginning of the study process, to explore the problem further. These interviews provided a deeper understanding of the problem, the organization and how the company operates. The people interviewed were chosen due to their knowledge about Xylem, connections to other actors, and their position within the company. After the main interviews were performed continuous contact with Xylem was held through several shorter

interviews by phone and complementary communication via email, in order to clarify any uncertainties.

In order to understand Xylem's relationships to other actors and to get knowledge and information about the company from a broad perspective, interviews with the Shipping Department Manager and the Project Manager in Group Logistics in Sweden were performed. Interviews with the Sustainability Manager in Sweden provided information about Xylem's current work and future plans with sustainability.

2.4.2 Interviews with TPLs

To understand how Xylem's TPLs operate and to get a description of their relationship to Xylem, five of Xylem's major TPLs have been interviewed. The interviewees have mostly been the TPLs key account managers for Xylem, dependent on that they are responsible for the contact with Xylem, and therefore have extensive knowledge about their relationship. In order to give the TPLs the opportunity to answer as sincerely as possible, both the interviewee and the company names are not published in this thesis; instead the TPLs are called TPL 1, TPL 2 etc. The TPLs interviewed were selected by Xylem, and four out of five TPLs are in direct contact with Xylem.

2.4.3 Interviews with sales companies

Interviews with five sales companies within Xylem Water Solutions were performed. The sales companies were chosen by Xylem, with the idea that a broad picture with several different views of the problem is to be obtained. Therefore, sales companies from different parts of the world were chosen, which resulted in that sales companies in Australia, Canada, South Africa, the U.S.A. and the United Kingdom were interviewed.

Interviews were held with the Logistics and Inventory Planning Manager in the USA, the Logistic Manager in Australia, the Business Improvement, Inventory and Logistics Manager of Xylem in England and the Procurement and Logistics Manager in South Africa. All the interviews with employees within Xylem Water Solutions provided an insight in the organization, and a deeper understanding of the relations between Xylem and the sales companies. All of the interview questionnaires are to be found in Appendix II. All performed interviews with the sales companies were performed by phone, and the information from the Materials Manager in Canada were collected by email.

2.5 Study process

In order to understand what business relationships Xylem has to their TPLs and sales companies, some of these relationships between the parties have been mapped. This provided a deeper understanding of how Xylem's relationships take form and how these can influence each other. To gain a deeper understanding of where Xylem's problem originates, the information flow between the relevant actors for this thesis has been mapped and also the material flow, i.e. the flow of products. These descriptions can be found in the empirical chapter.

2.5.1 Building the interviews

To be able to analyze and understand Xylem's current relationships and information flow with their intermediaries, several interviews were conducted. The questionnaires that were used in the interviews were built around four different areas; general questions, relationships to customers, information and communication, and sustainability. The first area, concerning general questions, was meant to result in a broad explanation of the interviewed company in general, in order to understand the company that was being interviewed. The second area of research, relationships to customers, were constructed in order to provide an explanation from the viewpoint of the interviewed companies, to how they relate to and collaborate with their customers. Specific questions regarding the relationship with Xylem were asked, and some of these functioned as control questions, as the interview with Xylem also provided a picture of how these relationships worked. The third area of research contained questions that were

meant to provide an explanation of how the interviewed companies shared information with other companies, mostly relating to their customers, and then foremost in relation to Xylem. The fourth area of research covered questions that provided an insight into how the companies handled the issue of sustainability, and most of all how the issue of sustainability was handled in cooperation with other companies.

The four areas were chosen due to the four areas of investigation, in order to be able to answer the research questions. Within each area of research, both open and closed questions were constructed. The open questions were meant to provide responses that were based in the viewpoint of the interviewee, thus providing an interpretation from their side to the current situation. Closed questions were thereafter used to pinpoint the exact meanings and details that were of special interest. These questions form the basis to be able to answer the four research question and in the end the purpose.

2.5.2 Structuring the analysis and conclusion

The analysis strives to discuss and analyze the four areas of investigation, in order to answer the research questions, and therefore achieve the purpose of the thesis. These four areas cannot be investigated separately due to their overlapping of one another. In the analysis the four research questions are discussed, with the purpose of fully answering them. The discussion around each of the research questions starts by applying the questions on the case study, and continues with a wider discussion about companies in general.

The conclusion is also structured based on the research questions, where all of the most important aspects from the analysis are collected and summarized. The conclusion aims to answer the research questions more concisely, in order to obtain a clear image of the result. It also aims to see how the most important aspects have helped analyzing how a company can improve the physical distribution service, which depends on connected companies acting as intermediaries, while considering its sustainable profile.

2.6 Source evaluation

Since this study has been performed in direct contact with Xylem during the whole process, it is possible that the final product may, to some extent, be influenced and biased. Since Xylem has conveyed the contact information to the companies interviewed, it is also possible that these interviews result in a situation that might not be favorable for the analysis of this thesis. It could also be that some companies of interest and relevance not have been interviewed, since the contact information has not been conveyed. However, it must be said that the interviews have covered all of Xylem's main TPLs, so the probability that useful information has not been collected is low.

The interviews with the TPLs and Xylem's sales companies might also be partial, and therefore affect the reliability. The TPLs are especially critical because they are suppliers to Xylem, and therefore they might want to give a good impression and not tell negatively things about their business. Additionally, it needs to be mentioned that some of the information collected from the interviews with the TPLs have been censored due to secrecy concerns, which might affect the conclusions.

Also, language barriers can affect how the questions asked were understood and interpreted, especially when interviewing the sales companies since they are from different countries worldwide. Also, answers via email could have been interpreted wrong due to shortly written answers in another language. In order to assure that the interviewee answers truthfully, control questions with known answers have been asked. Also, to ensure that the answers were interpreted correctly, all interviews were performed by at least two students, and they were also recorded.

3 Analytical Framework

This section presents the theories and models in terms of an analytical framework that is used to analyze the empirical data. A framework is a tool to analyze organizations or situations on a general level. The framework is based upon four areas of investigation in order to provide the thesis with theories and models. These four areas are; Business relationships, Information flow, Customer Service and Sustainability. Each area will end with a summary to get an overview over the most important theories and concepts that will be used further in the analysis.

3.1 Business relationships

In order to answer the research questions it is essential to analyze how a company can improve their physical distribution service and sustainability. It is important to understand how companies are connected to each other, how they interact with each other, and what affects them and their surroundings. In the following paragraph business relationships will be discussed from earlier research, to draw comparisons to and analyze relationships to intermediaries.

No company can exist on their own, but instead every company is dependent on customers, and also on suppliers of products, services, finance and advice. As a result, all companies are affected by the actions of the companies of which they cooperate with. (Ford et al., 2000) A company's actions, such as sales, purchases, advices, deliveries or payments can, therefore, not be understood without referencing to the relationship of which it is a part of. (Håkansson et al., 2002) There are elements that comprise relationships, which manifests in different ways in different relationships, such as social engagement and transfer of information (Daniel D. Prior), and clearly all relationships are not the same (O'Toole et al., 2000). Relationships provide the opportunity for the company to influence others, but at the same time these other relationships influence the company (Håkansson et al., 2002). Choices are in fact made in interaction with others and are dependent on emerging situations (Schurr, 2007). The interaction between companies can be interpreted as a process between companies, which changes and transforms aspects of resources and activities that are involved in the relationship. In fact, interaction is at the heart of business development. (Håkansson et al., 2009) Better understanding of patterns of interaction and their consequences for relationship change, may contribute to improved cooperation (Schurr, 2007).

Requirements of a relationship between two companies differ, as do the extents of integration within a relationship. With regard to levels of integration, relationships can be divided into three categories: transactional relationships, facilitative relationships and integrative relationships. Transactional relationships involve no interaction between two parties. This type of relationship is common when the offering to one customer is similar to offers to other customers, when the customer can make savings from price reduction and therefore does not want to tie up to one supplier, or when the relationship is brief and only involve one-time purchase. (Ford et al., 2000) There are transactional relationships, which involve repeated, frequent purchases, maintenance and operating supplies as well. In these relationships it is important with sales promotion in order to gain the customers preference and loyalty. (Frederick et al., 1992) This implies that exchange can take place without any significant intervening process between the counterparts present (Håkansson et al., 2009).

Facilitative relationships also involve relatively undifferentiated products and services, but in this case both parties are willing to invest in the relationship in order to increase the cost benefits. The integration could, for example, involve different order processes, adaptations to transport and logistics or payment agreements (Ford et al., 2000). By this kind of relationship, the process of purchasing and delivery of a product or service are improved, rather than the product and the service itself.

In an integrative relationship both parties are willing to invest in developing and adapting their resources and activities to suit each other's requirements. These relationships tend to develop over time as the scope of the relationship is extended. (Ford et al., 2000) These relationships involve long-

term contractual commitments, but in order to manage these relationships, they should involve negotiation based on mutual benefit. This results in a great stability and contributes to sharing of information among the companies and promotes aggressive, long-term growth policies. (Frederick et al., 1992)

Relationships face different hurdles that can be divided into five characteristics: social distance, cultural distance, technological distance, time distance and geographical distance. Social distance is perceived when there is low familiarity between the actors, while cultural distance is related to differences in norms, value, and working methods and is based in different national origins. Technological distance is simply differences in buyers' and suppliers' products and processes, while time distances concerns separation between events in a purchase process. Geographical distance refers to physical distance between two locations. All five of these distances are, however, reduced by integration between the companies. (Schurr, 2007) By creating unique communication environment in the relationship, these distances are minimized, and permit bonding between the companies occur. This will increase the trust as well as the commitment to the relationship, which will provide a more coordinated and effective relationship. (Griffith, 2002)

Today, many manufacturers hardly have any contact with the end users of their products. Instead they have close relationships with distributing companies, acting as intermediaries between a supplying company and end customers. In today's global markets, intermediaries are important, since they can help the supplying company to provide customers worldwide with information and after-sales services. They might also hold stock and deliver the products to customers. (Ford et al., 2000) The function of intermediaries can be designed in many different ways to serve the businesses in their specific situation. The distribution channels can, for example, differ between cases. In some cases the transaction flows are in the same distribution channel as the physical flow, and in some cases the flows are separated from each other.

Companies usually have relationships with several actors, where the different relationships are connected. What happens in one relationship between a supplier and a customer can affect a relationship between the supplier and another customer. When resources and activities are shared between actors, there will be either a positive or a negative connection between them. This phenomenon could be described as a business network, where all business within a network are connected to each other in one way or another. (Håkansson et al., 2002)

3.1.2 Business network

To understand how a company can improve their physical distribution service and maintain sustainability, it is important to be aware of surrounding actors, and how relationships depend and relate to each other. Therefore, business networks and relationships within a business network will be described.

No relationship can be understood without reference to the wider network, because relationships within a network are interdependent of one another (Håkansson et al., 2002). The companies are not only tied directly to other companies through relationships but also indirectly connected to others within the network, where the network may extend limitlessly in any direction (Blackenburg Holm et al., 1999). For example, what a company is able to offer to their customers is dependent on the company's relationship to, for example, its suppliers. However, there is more to interdependency between business relationships. For example, actions in a relationship to a customer can affect its relationship to another customer. (Håkansson et al., 1995) Except from manufacturers and customers, there are a several other actors that can be involved in the network. In order to fully understand and analyze one and every relationship, it is essential to refer to the wider network itself (Håkansson et al., 2002).

Depending on the counterparts of a company's relationships, and the counterparts' other relationships, a company will gain a certain position in the network (Koon Huat Low, 1997). Therefore, the individual company needs to prioritize the different relationships in order to manage and allocate resources in the best possible way (Ford et al., 2000), not only to maintain their network position and invest in existing long-term relationships, but also to develop new positions (Blackenburg Holm et al., 1999). The possibilities a company has in changing and developing new network positions are defined, but also limited, by its current network position. A company's existing relationships and commitments influence its possibilities of how they can control the network, or establish new relationships. To develop its network position, a company should see to its current relationships, and how they are affected by a change, as well as how the company itself is affected by alterations in the existing relationships (Håkansson et al., 2002). However, in order for companies to survive, and develop new positions, they have to deal with relationships other than just the customers and suppliers in the supply chain (Hadjikhani et al., 2009).

SUMMARY

Companies are affected by other companies' actions, with whom they cooperate with. The interactions between the cooperating companies, within a relationship, can be seen as processes, where the level of integration within these relationships can be divided into the three categories: transactional-, facilitative-, and integrative relationships. Transactional relationships mean a low level of integration, while facilitative relationships result in a higher degree of integration. The highest level of integration, integrative relationships, involves extensive mutual adaptations and investments between the companies in the relationship.

Obstacles that the relationships may encounter can be divided into five categories: social-, cultural-, technological-, time- and geographical distances. To minimize these distances, and to create bonding between the companies, a unique communication environment needs to be created. This will eventually lead to an increase in trust and commitment, and finally create a more coordinated and effective relationship.

A single business relationship must, however, be described within the context of a business network. Business relationships within a business network affect each other, both directly and indirectly. Activities within one business relationship affect the activities within the other business relationships in the network; the business relationships can be affected of one another. The network position that a company has within a network is defined by the relationships that the company has to other companies. The possibilities for change within the network are defined by the company's current network position.

3.2 Information flow

In order to understand how companies communicate in a global network, and how they jointly can improve their business relationships and interaction and thereby customer service, it is important to gain an understanding of how flow of information between companies affects their businesses.

Today, companies value information highly, and choose to see it as a strategic asset that can give competitive advantages (Detlor, 2010). Through effective communication between actors in a network, the acquisition of information can be achieved (Bourne, 1963). Good information processes afford several kinds of benefits to an organization: a reduction of costs, a reduction of uncertainty or risks, added value to existing products and services and the creation of new value adding information-based products and services (Detlor, 2010). Additionally, since companies are steadily growing in size and complexity, efficient information flow is needed even further (Bourne, 1963).

Information flow is the foundation for integration in a strategic alliance and can be described by three characteristic levels; information sharing, information quality, and information technology. The information sharing can be explained as the exchange of knowledge among partners within a network,

in order to serve customers more efficiently and effectively. (Vanpoucke et al., 2009) A high level of information sharing is associated with lower total cost, higher fulfillment rate and shorter order cycle time (Li et al., 2006). Information quality, on the other hand, is more of an indicator of the clarity and usefulness of the information shared (Vanpoucke et al., 2009), and is essential to the company in order to be able to gain the advantages of the information sharing (Li et al., 2006). The third characteristic level, information technology, enables companies in global business networks to, in an easier way, achieve close coordination between different functions located worldwide (Bagchi, 1992), and permits larger amounts of information to be shared among companies (Detlor, 2010).

The part of the information flow that binds companies together and drives the effectiveness of the relationships is the information sharing (Ewing et al., 2012). In a business relationship, incoming information from other actors is the most important source for continuously updated information, since this incoming information enables an organization to improve and develop the business (Mu et al., 2008). The shared information is, for instance, the primary information source in companies product development activities (Eckert et al., 2001), and it is also essential to make customers aware of new products and services and to create a customer demand (Caldeira Pedroso et al., 2009). To achieve a good information exchange in a business relationship though, it requires that both parties are willing to share important and proprietary information (Cannon et al., 1999). By sharing information among the supply chain partners the bullwhip effect, that has a negative impact on the partners, can be reduced. Together, the partners can also understand the needs of the end customer, and respond quicker to market changes (Eckert et al., 2001).

However, in able to make the right decisions and to create the advantages, with good information sharing, the quality of the information is essential, especially since information suffers from delay and distortion as it moves up in the supply chain (Li et al., 2006). Information quality is measured by the degree to which the information shared between supply chain partners meets the needs of the different partners. According to Neumann the information quality can be defined according to four characteristics: “content, the information included in the information system; accuracy, the accepted percent of errors in the data; recency, the delay between the real occurrence and its presentation; and frequency, the length of time between two subsequent occasions in which the information is made available to the user (1979).

For companies participating in global businesses, with distance and time differences, the information technology is essential, in order to maintain the connections and to follow up information and communication across different continents (Bagchi, 1992). In these connections between actors, much information is exchanged and the quality of this information is important. Sometimes problems occur in the information flow in these connections because of bad communication, rather than the information quality itself. (Håkansson et al., 1995) Therefore, connections with other actors are essential in order to enable a company to develop, and through these connections with information flows be able to achieve a better understanding of the industry and competition (Mu et al., 2008). An easy way of improving the connection between different actors in a business network is to use common standards of information technology (Bagchi, 1992).

Communication between actors is a difficult and time consuming task, but it works best when the different parties can meet each other in a direct and easy way. Therefore, involving a third party, for instance a TPL, complicates the communication and the information flow between the companies within the original business relationship (Eckert et al., 2001). Introducing a third party between two companies is highly dependent on the fit between the different partners within the preexisting relationship (Bagchi, 1992). The complication of the communication and the flow of information depends on the third party serve as a conduit, where the communication needs to be transferred through one more actor, which may delay the information transferring time, or change the information content. The third party makes it harder to locate specific information about products, and tracing them becomes harder due to more intermediaries being included. (Eckert et al., 2001) This sharing of

information and collaboration with different actors is a complex problem and is therefore seen as the top logistic challenge (Vanpoucke et al., 2009).

SUMMARY

The information flow can be said to consist of three distinct levels: information sharing, information quality and information technology. A high level of information sharing is associated with lower total costs, and the ability to more efficiently understand the needs of end customers and respond to market changes. The information quality is an indicator of the usefulness of the information that is being shared, and the quality can be measured according to content, accuracy, recency and frequency. Standardized information technology can be used to establish efficient communication between companies. Involving a third party, such as TPL, through which information must be transferred, increases the complexity of the information flow, as well as the risks for the information being delayed or distorted.

3.3 Customer service

The following paragraphs will draw upon what is described in already existing literature concerning the concept of customer service, and related key concepts that will be of use in the coming analysis.

Customer service is a concept of several dimensions and it is hard to find a precise definition (Duane et al., 1992). One such definition, however, is that customer service is a series of activities, provided before, during or after a purchase, meant to increase the level of customer satisfaction (Turban et al., 2002). Relating to customer service within an industrial context, the traditional view of customer service is that it is the interface between marketing and logistics (Coyle et al., 2003). However, a new vision has emerged, defining customer service as a value adding function (Coyle et al., 2003).

The logistical customer service can be seen as part of the third level of a product, the augmented product, which includes intangible benefits that are secondary to the product's main functionalities (Coyle et al., 2003). Customer service logistics is a process that adds benefit to a company's supply chain and provides competitive advantage, in order to maximize the value for the end customer (Coyle et al, 2003). A significant part of the value of a product is created by logistics, and therefore, the service provided to the customer through logistics can be defined as a component of this logistics value (Leuschner et al, 2013). Furthermore, research states that superior logistics customer service can lead to better overall firm performance (Leuschner et al, 2013), and a competitive advantage (Coyle et al., 2003). This in order to improve a firm's performance, customer service needs to be relevant to customer needs (Heskett, 1994).

Included in the customer service between order and shipment is the concept of delivery precision, which refers to the share of products that are shipped from according to the time agreed upon with the customer (Jonsson et al., 2010). This could be seen as a traditional measure of customer service, where the company is only interested in the service prior to shipping (Coyle et al., 2003). If a selling company is focused solely on the service prior to shipping, the case may be that the customer is not satisfied without the seller knowing, because of problems arising during the delivery process (Coyle et al., 2003).

The physical distribution of products involves the physical distribution service, for example to what extent a company can deliver to end customer on time (Jonsson et al., 2010). This concept of on-time delivery of transported goods is a customary and significant measurement of the performance of a physical distribution system (DeHayes, 2007). Physical distribution service further includes activities such as transportation, inventory management, warehousing, and packaging and loading of materials (Bienstock et al., 1997).

The quality of the physical distribution service can be defined as the physical distribution service quality, made up of three dimensions: timeliness, availability and condition (Bienstock et al., 1997).

Emerson proposes another dimension, that of information (1996). Studies suggest that information in itself can be a direct customer service (Emerson, 1996). Having contact with customers concerning their needs can be of equal importance to that of accurate electronic flow of information between buyers and sellers (Coyle et al., 2003).

SUMMARY

A significant part of the customer service offered to end customer is provided during the transportation of products. This logistical customer service can be defined as physical distribution service. The quality of the physical distribution service can be divided into four different aspects: timeliness, availability, condition and information. Having effective communication is an important part of the service provided to customers.

3.4 Sustainability

Sustainability in operations is of outmost importance in today's society, which also includes the operations on the business markets. We will in this part of the literature study take up aspects of sustainability that later will be applied to our case study.

Companies are sometimes asking why they should invest in a more sustainable business practice and what are the expected benefits are. Studies have shown that investing in sustainable technology and development will give external effects, besides the direct effects on the sustainable footprint of the company in question (Lefebvre et al., 2001). Business with a high level of commitment toward sustainability will often notice one or more of the following effects: lowered costs, more efficient processes, higher customer value, higher sales levels, advocate creation and an increase in investments from affected groups (Lippman, 2001). A company that works toward creating and maintaining an image of being an actor who cares for the environment will often receive a higher level of commitment from its customers; customers which in turn may communicate their satisfaction to others, effectively creating advocates for the company's case (Cook, 2008). If the company is in the forefront of technology in a certain area of sustainability, there is also a chance of increased media coverage, essentially providing the company with free exposure (Lefebvre et al., 2001). In short, the work toward sustainability may aid companies by providing a more solid base from which to compete, by having more loyal customers and a better reputation (Lefebvre et al., 2001).

Going further into the benefits of working with sustainability, one study shows that companies active in this field are more innovative and are better prepared than those companies who are not (Lefebvre et al., 2001). Because of the need for change that comes with the work toward sustainability, a culture of change will be established in the company, making other non-related changes to products, processes and management more likely to be accepted (Lefebvre et al, 2001). Another benefit of sustainable development, is that projects which aim to reduce the environmental impact often has an effect on the cost structure, effectively cutting costs; an increase in effectiveness is good both in terms of resource expenditure and economics. Several observations have been made, where such positive covariance can be stated (Baker, 2009) (Oswald, 2010) (Beck, 2008). Therefore, there must not be a mismatch between sustainability and profitability, where one must stand back for the other, but rather a situation of bilateral gain where both parties benefit from a change.

Customers today place higher demands on companies to work with sustainability. These demands do not end with the company itself, but will cascade down throughout the network of connected actors; any problems found in a company's supply chain may have an effect on the reputation of the main company (Lippman, 2001). Because of this and the immense challenges, which come with the work toward a sustainable future, it is not enough for each company to act as an individual; in order to satisfy demands from customers and other parties, cooperation between actors is necessary (Nawrocka, 2007). By lifting issues regarding sustainability to a higher level and analyzing the entire system, instead of individual actors, the possibilities increase in number and scope (Bradbury-Huang,

2010). The impact of these actions is increased by collaboration between actors and through the sharing of information about certain processes (Bradbury-Huang, 2010).

As stated by Bradbury-Huang, the investments made under collaboration give "More bang for your buck", meaning that the collaboration provides new possibilities, which are more effective than actions performed by the individual company. This approach does, however, have the drawback of sometimes requiring companies to trust its competitors when sharing information. Some companies may not be willing to share what could be considered as trade secrets in order to improve the sustainability of the processes involved. One way to get a collaborative project underway, is to create an enterprise-spanning group of executives, where sustainability is undertaken methodically and collaboratively. By including managers and other employees, who have complementary knowledge bases, problems can be seen from different angles, which might lead to ideas about better solutions and more sustainable operations on a system level. (Bradbury-Huang, 2010)

Although close collaboration between actors is attractive in terms of sustainability, other methods may also be used in order to improve the sustainability of a business relationship. Companies may use the more traditional method of placing demands on its suppliers, followed up by audits and other control mechanisms (Nawrocka, 2007). These demands can include certification requirements, such as ISO 14001 or ISO 9001, as well as a company-specific list of requirements, not all relating to sustainability (Nawrocka, 2007). The use of certification requirements is by some companies considered as enough in terms of sustainable control, as it shows that partner companies have made adjustments in order to achieve more sustainable operations (Nawrocka, 2007) (Slack et al, 2010). This approach might be harmful to the overall sustainability of the system, as it has large costs associated with it and enforces a strict way of handling sustainability issues, i.e. promotes the notion of management by manual (Slack et al., 2010). The use of certifications will also require the certification details themselves to be a good way of handling the issues at hand, as well as require the organization who issues certificates to be of high standard, which might not always be the case (Slack et al., 2010) (Nawrocka, 2007). In order to mitigate the problems that come with certifications, the company might to use other complementary lists of requirements in order to control its partners operations (Amengual, 2009).

Private regulations might not always cover all issues relating to sustainability (Amengual, 2009). To follow up on the demands via audits and other methods also require significant resources from both sides of the relation (Lippman, 2001). Some types of issues are also not handled easily by private organizations, as pursuing these issues might cause conflict of interest (Amengual, 2009). Other types of regulation, such as those from governments and NGOs, can therefore provide complementary benefits to private regulations (Amengual, 2009). This type of regulations does not have to be coordinated in order to be effective, because the different characteristics of private and public governing puts emphasis on different parts of what might be a similar list of requirements because of comparative advantages (Amengual, 2009). Government regulations also provide the ability to make adjustments which affect all actors, such as compensating for the environmental cost of certain resources, something private regulation cannot do (Slack et al, 2010) (Amengual, 2009).

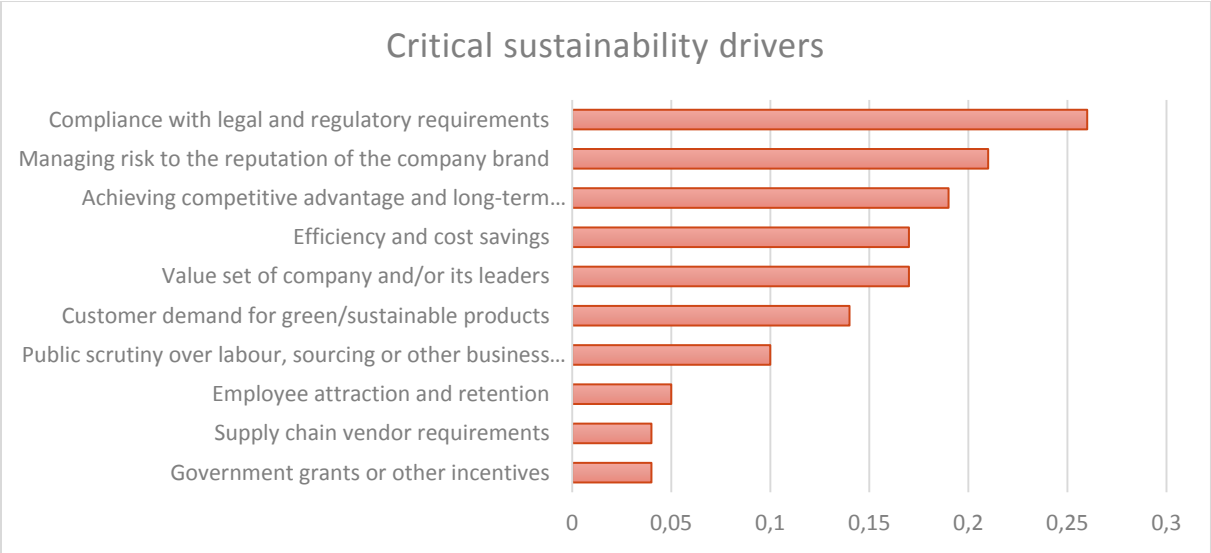


Figure 3.1 The drivers of sustainability in Canada

The graph above shows the drivers of sustainability, which companies in Canada experience (CA Magazine, 2011). This graph shows that there is not one solution to dealing with sustainability issues, but rather a combination of direct benefits and demands that constitutes why companies engage in sustainable operations. One of the most important factors is the use of regulations from private and public organizations, as these provide clear targets for a company to work toward (Amengual, 2009). As information about the benefits of working toward sustainability spreads throughout companies, more companies might consider putting more emphasis on sustainability (Lippman, 2001) (Baker, 2008).

SUMMARY

Working toward sustainability can prove to be beneficial for a company, in the sense that it can establish a more loyal customer base as well as a good reputation for the company and a strengthening of the company brand. A company cannot act individually regarding these aspects, as cooperation is needed with other companies. Within the cooperation, a company can communicate requirements and demands to their business partners to influence the inter-organizational work with sustainability. However, a significant complement to these private regulations are the public regulations, of which legal and regulatory requirements can be said to be one of the main drives for sustainability.

4 Case study

This empirical chapter aims to give an understanding of the problem at hand. The chapter will first focus on Xylem as a company and will then continue with information about the third-party logistics providers and finely about the sales companies. Further information is to be found in Appendix IV

4.1 Xylem

Xylem in Emmaboda, Sweden, referred to as Xylem, is the main focus of the case study of this thesis, and is part of Xylem Water Solutions, where Xylem Water Solutions is one of three business units within Xylem Incorporated. The word xylem is Greek and refers to "the supporting tissue that helps transport water and nutrients from a plant's root to its leaves". Xylem Incorporated is a worldwide leading provider of water solutions and is present in more than 150 countries, and has a turnover of around 4 billion SEK, and approximately 12 500 employees worldwide.

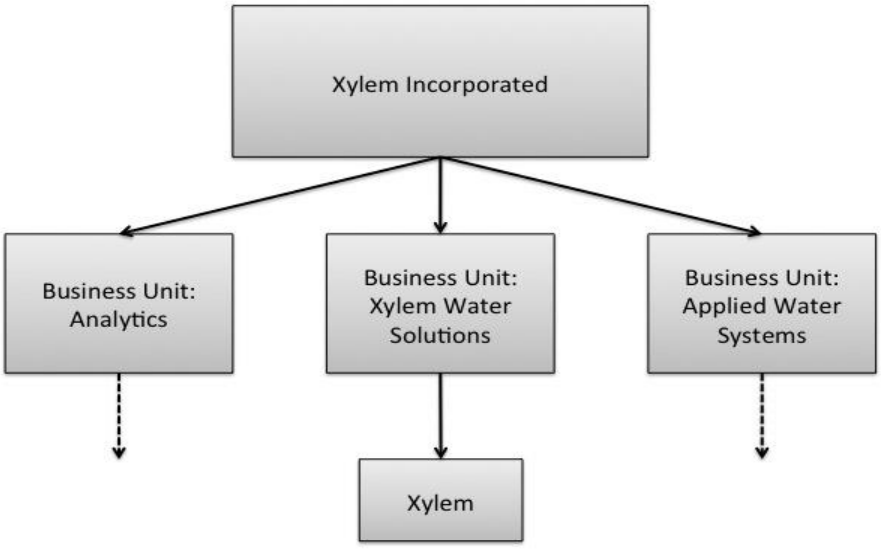


Figure 4.1 Xylem is a part of Xylem Water Solutions, which is a part of Xylem Incorporated.

Xylem is specialized in complete water cycle solutions. The cycle is divided into two business segments: Water Infrastructure and Applied water, where the water infrastructure is the largest segment and represents 63.5 percent of the total revenues. Within these two business segments, Xylem provides several different products divided into four product segments; Analytical Instruments, Pumps and Accessories, Controllers, and Water and Wastewater Treatment. Xylem is active in the public utility; industrial, commercial, residential, and the agricultural markets, where the industrial market is the largest segment representing 40 percent of total sales. They distribute all of their products worldwide.

Since Xylem is a worldwide provider of complete water solutions, they need to distribute their products all around the world; in order for Xylem to be able to do that the transportation and the deliveries have to function very well. A well working and responsive delivery system is also needed due to customers' needs of spare parts, where availability is often of essence. Therefore, it is important for Xylem to be able to offer well working and reliable deliveries.

XYLEM WATER SOLUTIONS' BUSINESS IDEA, VISION AND STRATEGY

The overall goal for Xylem Incorporated is to achieve a sustainable success, and to maintain their competitive market position, but also to deliver both long- and short-term value to customers. The business idea is to: "provide wastewater and dewatering pumps, biologic treatments, filtration and disinfection products for municipal and industrial use", while the vision of the company is to devote

their technology, time and talent in order to advance the smarter use of water, and therefore contribute to eliminations of water issues in the future.

ORDERS AND DELIVERIES

Xylem always sells their products through sales companies to the end customers, exceptions do occur but that rarely happens. All of the information regarding sales and transportation is exchanged between these actors and Xylem as well. The transports, on the other hand, are booked by Xylem and go mostly directly from the warehouse to the end customer.

When a customer decides to make an order they contact the sales company responsible for that specific area, and gets help to complete and place an order to Xylem. The sales company then contacts Xylem, either through email, by phone or via order programs online, and place the specific order for the customer. The order coordinator at Xylem Emmaboda, that is responsible for the specific sales company, gets the order and can confirm it with including delivery date when all the parts and pumps are put into production. The sales company receives the order confirmation with the delivery date on an acknowledgement, and is then able to confirm the date to the customer. The delivery date is the date the order is to be sent from Xylem. When the complete order is ready to be shipped, the shipper at Xylem Emmaboda books a transport with the end customer's address as the final destination.

Xylem ships about 58 thousand shipments yearly, and these shipments are addressed to approximately 16 thousand different delivery addresses. To be able to complete all of these transports, and to meet the customers' needs and requirements, Xylem uses third-party logistics providers to perform the transportations and the deliveries of the goods to the customers. There are nine shippers working at Xylem Emmaboda, each one responsible for booking the transports for the orders. The coordinators at Xylem who are assigned a sales area where they are responsible of planning, booking and finally making sure that the orders leave the warehouse with the planned transports. Coordinators are also in charge of the consignment notes which are put on the goods packages, and of all of the required documents and certificates needed for the specific final destination, to go with the goods in order to pass the customs by the border to the country it is to be shipped to. There are different rules depending on the export destination, and the shippers at Xylem Emmaboda need to keep themselves updated with the newest information regarding export regulations and laws.

Each of these TPLs is responsible of a specific geographic area and delivers everything in that region. The TPLs distribute Xylem's goods by boat, truck or airplane. The mode of transportation used is dependent on the TPL, region and distance, but also on the agreement that has been made between the parties, and this is possible due to the sales companies. The sales companies are responsible for providing Xylem with the latest information, regarding export regulations and documents needed, in order to enable Xylem to ship the goods to the sales companies' specific sales areas. Within the European Union, shipments of goods are relatively simple. The shippers are also responsible of sending out the commercial invoices of the shipped goods to the sales companies, to enable them to charge the end customers for their order. The price of the different transports depends on, for instance, the mode of transportation, documents required, and the physical distance to the delivery address.

Xylem receives calls and emails from the sales companies with complaints regarding delayed deliveries. The goal is for Xylem to prevent these complaints by informing the customers proactively when orders are delayed. Xylem wants to be in charge of booking the transports, and planning and having the contact with the TPLs, in order to get economies of scale due to fully loaded transports, but this also makes Xylem responsible for the transportations. Today, Xylem does only measure delivery precision from their warehouses. Improvements of the numbers of delayed deliveries will benefit both themselves as a company, but also the end customer and their satisfaction.

DELAYED DELIVERIES

Before an order is shipped from Xylem's warehouses or production sites, Xylem is in complete control of the order and the order status, where they regularly update the sales company with information regarding the order status. But, when the order is shipped, Xylem does not follow up the shipment status regularly, which makes Xylem unaware of the shipment status. But, Xylem does not, in most cases, leave the responsibility to the TPLs, since Xylem is the party responsible of the transport due to the written agreements. Therefore, if delays of deliveries occur, Xylem does not know about it immediately, which in some cases angers the end customers. Today, Xylem does not have any established routines of handling the situation when the customers complain.

MANAGING NETWORK RELATIONSHIPS AND INFORMATION EXCHANGE

Xylem uses the services of other companies, in order to have contact and distribute their products. There are two kinds of intermediaries that support Xylem with these services; Sales companies and third party logistics providers.

SALES COMPANIES

The customers contact the sales company responsible in their area, in order to place an order to Xylem. The sales company then needs specific and detailed information from the customers regarding the ordered pumps or spare parts, in order for the information sent to Xylem to be correctly specified. When the customer and the sales companies agree, the sales company places an order to Xylem. After the order is placed the sales company serves as an information intermediary, where they forward information back and forth between the Xylem and the customers. When the order reaches Xylem, the coordinator responsible for the sales company handles the order and places it into the system. If some additional information is needed in order to fulfill the order, the coordinator at Xylem contacts the sales company and asks them to complete the order with the information needed. The sales company then forwards the request for more information to the customer, whereupon the customer adds the information missing and sends it back to the sales company. When all information is specified, the coordinator is able to complete the order and place it in production. The sales company then receives an order acknowledgement with delivery date for the order to send to the customer.

While the order is in production, the sales company has close contact with the coordinator at Xylem in order to know the status of the order, in case any abruptly changes would happen that the customer should know of. The sales company is in complete charge of the information flow from Xylem to the customer, and it is very important that this information channel is well working. Therefore, there is one person at the sales company responsible of order placements of Xylem products from their specific sales area, and this person is very familiar with Xylem and the customers. At Xylem there is also only one person working with order placements from a sales company's specific sales area. These two people are working closely together and have daily contact. These people have in most cases met on business trips or visits and actually get to know and see each other. Therefore, the relationship between a coordinator and the person responsible at the sales company is strong and important, and the communication is good. After the order is packed and ready to be shipped, the sales company receives the commercial invoice and departing confirmation of the order leaving from one of Xylem's warehouses, and forwards the information to the customer.

Some of the sales companies place their orders to Xylem by emailing, calling or faxing the responsible coordinator. The sales companies very often use their own specification formulas, which results in important and necessary information missing; missing information that the coordinator would need in order to be able to complete the order and put it in production. The sales company then needs to ask the customer for additional information and the exchange of information can take long, due to many parties involved, and the delivery date might be pushed to a date later on. The total administration for the order might get very extensive, and it can get expensive for all the parties involved.

Other sales companies have permission and access to Xylem's standardized online information technology systems, EDI, and can thereby place their customers' orders directly into the systems. By logging in into the online systems they are requested to fill in all of the necessary information and details in order to be able to complete the order, which is much more time efficient than the emailing, calling or faxing strategy, since both the sales companies and Xylem know that the orders contain all of the information needed. When Xylem has received the order, the coordinator at Xylem checks the order to see that all parts are available, and keeps checking it until the complete order is packed and ready to be shipped from one of Xylem's warehouses.

TPLs

Xylem engages third party logistics providers, TPLs, as distributors of goods. The TPLs are in charge of the responsibility of a specific transporting area, and deliver all of the shipments there. Dependent of Xylem's high expectations on the third party and the belief that a long term relationship will benefit the company with greater knowledge and information, Xylem carefully considers whom to retain as a TPL, and select them with the objective of obtaining a TPL that meet the expectations today, but also in the future. When Xylem engages a third party such as a TPL, the one chosen has to be approved by the Company Legal Department in order for the TPL to promise to meet the Company policies. Also, the relationship needs to be documented in written agreement between the two parties. Xylem only has five main TPLs, from the distribution centers in Emmaboda and Metz, in charge of the worldwide shipments, in order to be able to have close relationships with all of them. This enables good and effective ways of exchanging information and cooperation.

The one TPL Xylem considers being the best one, is the one that successfully meets Xylem's needs and expectations. The TPLs is very customer-oriented in their way of dealing with Xylem, and takes the time to solve temporary or occasional problems occurring along the way. Xylem is a big and important customer to this TPL, and Xylem considers this as an advantage. The TPL is also considered to be the best due to their way of handling the transportations, where they keep better track of the shipments than Xylem's other TPLs do. This specific TPL does also provide many contact persons to be available for Xylem to contact when questions or problems occur. Xylem does always experience good expertise when contacting them, and that the staff is well aware and knowledgeable of the situation, due to that Xylem always gets the expertise from the person responsible for the specific area of the problem or question. If Xylem questions a large or very important shipment, the TPL has a Key Account Manager that is available to help out.

The one TPL Xylem considers having the best relationship with is the one that has made changes and adaptations in their own organization to fit Xylem's requests and organizations, in order to enable a better and more effective way of cooperating with each other. The information exchange between Xylem and this TPL goes through an electronic data interchange system, so called an EDI system, which has been implemented in both companies in order for the information flow to be more effective and easier to accomplish. In this system Xylem is able to place an order themselves directly into the TPL's system, which simplifies the order handling and reduces operational costs. The TPL has done some modifications to their system, which simplifies the usage of the system for Xylem as a customer.

SUSTAINABILITY

Xylem Incorporated says in their sustainability report that very small actions can result in meaningful changes, and that these small actions can be the start of something bigger that one company is able to create on its own. They see themselves working with water issues in order to decrease the water scarcity that occurs in different areas worldwide. For instance, the water scarcity depends on droughts and pollutions due to aging ways of treating water, such as leaking pipes and badly working pump systems. While population grows, the need of water increases and the water scarcity are growing bigger, and the problems become very urgent and complex. Xylem Incorporated says that their

challenge will be to minimize the impact on environment, while maximizing the growth potential of their company.

Since Xylem Water Solutions works with water treatments, and ways of handling water in a better and more effective ways, sustainability is naturally ingrained in their business. Xylem Water Solutions wants the sustainability to be central to their identity by including it in their slogan: "Let's Solve Water", where they see this as the overall company mission. Xylem has created a committee called "Sustainability Steering Committee", consisting of a group of people from different geographies, businesses and functions within Xylem Water Solutions, that meet regularly in order to update each other, and to make sure that all sustainability issues and goals operate under agreements. Xylem Water Solutions does also include sustainability in their plans of growing as a company, where one way of growing in is by advancing a sustainable environment. Therefore, they have started a growth initiative called "Sustainable Water Infrastructure", to solve both global issues and customers' challenges. In 2012 Xylem Incorporated was promoted with a position on the Dow Jones Sustainability Index, which they saw as progress in their continuing work toward a more sustainable situation.

REGULATIONS

There are many regulations and laws, made by authorities and governance, for Xylem to comply. Also, Xylem does have their own rules and values internally, and these are written down in their code of conduct. This is Xylem's way of stating how they want their own company and employees to operate and work, but also what they require and ask for from their business partners and others actors they cooperate with. The code of conduct deals with Xylem's overall view of business behavior, but also human rights, policies, and urges to follow regulations and laws.

The regulations stated by the authorities and the laws need to be complied with, otherwise it will result in both internal- and external investigations. The internal processes aim to correct the problem, and prevent similar mistakes in the future, while the external processes may have to involve both the authorities and the police. Xylem has a staff lawyer whose job is to work with these external cases, and enable Xylem to handle the situation properly.

TRANSPORTS

Xylem does require reports on environmental impact from their TPLs, and they receive them quarterly. Xylem is certified to Q3, which means that they work with sustainable transportation. The Q3 certificate indicates that Xylem requires their TPLs to follow rules and laws, make sure that the drivers use safety belt, and that the procurement documents includes promises between the two parties to reduce the environmental impact.

Xylem cares about the transportation mode the transporters choose when shipping Xylem's goods. They consider this important, because the choice will result in a stronger or lighter environmental impact. They regularly work with environmental improvement projects, and right now they are looking over the possibilities of changing flight shipments to go by boat instead. A change like this will require to look at the impact on for instance lead time and warehousing, but if it is possible it will result in lighter environmental impact. A few years ago Xylem managed to change the transportation mode for shipments from Xylem in Emmaboda to the warehouse in Metz. Earlier, the shipments had been transported all the way by truck, but after the changes the shipments travelled some of the distance by train, in order to reduce the environmental impact. Xylem says that money controls every decision, but states that they are very pleasantly surprised when environmentally advantageous proposals are more cost efficient.

IN THE FUTURE

Xylem has future goals with their sustainability. Work environmental relating issues aims to reduce work-related injuries to zero. There is a good trend in the statistics for the past years showing a

downward slope, but Xylem says that it is almost impossible to reach down to zero, but they work toward it regularly. The environmental goal is to reduce the carbon dioxide emissions, and that includes both transports and facilities, but they also work hard with making their products more energy efficient in order to reduce the energy consumption for the customers. Xylem has made product life cycle analyses, where they clearly saw that running the pump consumed the most energy in the entire life cycle. The more energy effective the pumps are, the less energy is required. This results in a more cost efficient situation for the customers, and makes Xylem's products interesting on the market.

4.2 Third-party logistics providers

Third-party logistics providers have been interviewed in purpose to gain understanding of how they run their business, what type of relation they have with different customers, and how they share information with other actors. Below are the results from these interviews. The term customer is frequently used in coming paragraphs. Since this part of the case study deals with the TPLs, "customer" refers to the customers of the TPLs, and not Xylem's customers. The term customer, when relating to the TPLs in the majority of cases, refers to the company that sends products, i.e. Xylem, and not the receivers, i.e. Xylem's end customers.

4.2.1 TPL 1

TPL 1 is a large group, consisting of several underlying, independent firms, which operates worldwide. It is one of the world's biggest TPL:s with annual revenues of approximately 56 million euros and has about 500 000 employees. In Sweden the firm has about 5 200 employees. They offer complete solutions to the customers and aim to operate close to the customers. In Sweden, TPL 1 has 26 terminals through which transports are handled, all between Malmö and Umeå.

Apart from the regular transports that they perform, TPL 1 have an express service, which enables faster deliveries to more specific addresses around the world. Apart from the transportation solutions that TPL 1 offers to its end customers, TPL 1 also offers warehousing and storage services. Through this collection of services TPL 1 offer complete solutions, for their customers.

RELATIONSHIPS WITH CUSTOMERS

The customers are segmented according to how important they are to TPL 1. The company aims to have close and long-term relationships with its customers. Since the company has many customers, they can only establish close relationships with their most important customers. Important customers have key account managers that are responsible for a certain customer. The small customers share one seller with about 300 other customers, which make it impossible for TPL 1 to have a close relationship with them. The fact that the company is of a very centralized structure furthermore makes it difficult for TPL 1 to establish close relationships with small companies that are generally more interested in local connections. Regular contact with these smaller companies is usually handled on or two times a year. This contact is handled mostly by e-mail. In the case of more important customers, the sellers have continuous contact with the customer, which means that they call or visit them at least four times a year.

TPL 1 is one of the largest players on the market, which is their main advantage over their competitors. TPL 1 cooperates much with its customers. They prefer standardized procedures with their customers. However, cooperation and adaption is necessary with the most important customers. The most important customers cannot always adapt to TPL 1's routines, and TPL 1 cannot always operate in the way their customers prefer. Therefore, TPL 1 adapts its operations, to some extent to that of their most important customers.

INFORMATION EXCHANGE

When placing orders, customers can choose what information they want to receive. The customers receive notifications when the shipments have arrived at their destination. The shipment is scanned

and recorded at every terminal it passes on the way to final destination. If the customer wants, it is possible to receive notifications about these events, but this is a service with additional cost. The customer can receive notifications via e-mail or text messages to a telephone. If the customer chooses not to receive this information, TPL 1 will not send this information. TPL 1 has an online service where customers manually can follow their transports online. The customers can access their own transports, regarding shipping statistics, current status, and so forth. This track and trace system is accessible for shipments worldwide. Furthermore, customers can pay for an additional service called "Active Tracing". This service enables customers to in real time follow their freight. Using this service, e-mails are sent to the customers if shipments deviate. In the majority of cases, information is only sent to Xylem, Emmaboda, and not to a sales company.

Summarized information regarding transports is sent monthly to the important customers. These reports are extensive and contain large amounts of data, e.g. cargo volumes, pricing and number of shipments that month. TPL 1 and the customer usually follow up and analyze its shipments quarterly. The usual case is that exact arrival times for shipments are not specified. If the customers want to, they can decide if they want the products before a specific time on the delivery day. This is therefore an additional service offered by TPL 1. Otherwise, the shipment is said to arrive on a certain day, but the exact arrival time is not specified.

SUSTAINABILITY

The firm is certified with both ISO 9001 and ISO 14001. They are also environmentally conscious, and have strict requirements for the transports. For example, their cars are driven by biogas and their trucks are driven by biodiesel. However, they do not believe their work with environmental sustainability gives them any competitive advantages as their competitors also work with the same sort of improvements. They also think that they are not very good at communicating their work with environmental sustainability. The customers' higher demands drive TPL 1 to improve their operations and their business in general. TPL 1 experiences that many customers have strict requirements regarding sustainability, e.g. environmental awareness, cargo security, alcolocks and plans for how to handle accidents. Since the customers have different requirements, TPL 1 has to change and improve constantly.

4.2.2 TPL 2

TPL 2 operates worldwide, but Europe is their biggest market, where the firm is the dominant player. Their total market share however, is only 2,7 %, which can be explained by the fact that most transports are handled by local, smaller, contractors. The firm has a total annual revenue of 14, 9 million euros, and about 62 000 employees worldwide. They use all kinds of transportations, and offer complete solutions to the customers, which may also include services such as warehousing.

RELATIONSHIPS WITH CUSTOMERS

Most of the company's customers operate in the production industry, but they also transport consumer goods and durables, but to a minor extent. The customers can be either the sender or the receiver, but TPL 2 prefers the sender to buy the services, and therefore act as the customers. Therefore, what is referred to as the customer is usually the sending company. The company is decentralized which enables them to have close relationships with the local customers. In Sweden the firm performs 25-30 % of all transportations. Because of its decentralized structure, the connection with local customers is very important. TPL 2 aims to adapt its processes to its customers.

If receivers do complain about shipments or not, depends on the criticality of the transports. Shipments that are very critical for the customer, and are delayed, may result in the customer complaining after just a couple of hours. However, shipments that are not as critical may not cause customers to complain until after a few days delay.

TPL 2 formerly was a more important supplier for Xylem, but today they only handle transports to Finland, Norway and Poland. Xylem is now seen as an important customer for TPL 2, but TPL 2 is not dependent solely on Xylem. Likewise, TPL 2 are seen by Xylem as an important business partner, but not the most important one. Xylem handles bookings through TPL 2 every day.

TPL 2 meets with Xylem a couple of times per year to evaluate the cooperation. Statistical reports, as previously described, are sent to Xylem on a monthly basis. The information is compiled in an Excel document and sent via e-mail, an approach that is used for several customers. TPL 2 experiences a lack of information regarding Xylem's transports, since TPL 2 have difficulties in measuring the delivery precision for deliveries to addresses outside of Sweden. Some data can be compiled for international deliveries, but not extensive data.

INFORMATION EXCHANGE

The customers receive statistics about their deliveries monthly. These reports are extensive and contain lots of detailed information, much like the information sent monthly from TPL 1. The reports sent to customers within Sweden contain 10 columns of information, and the information sent to customers outside of Sweden contains 15 columns of information. It is stated that this information should be able to organize in a more efficient way, however, this would, according to TPL 2, prove time demanding. The information concerns cargo volumes, weight, prices and so forth. 90% of the information in these reports are said to be according to industry standards within the transportation industry.

In addition to these monthly reports, the customers can use track and trace systems, to track their shipments. However, this is a manual process and requires an active undertaking from the customer. This is real time data, but has to be accessed manually. TPL 2 does not currently have a service where this information can be communicated automatically to its customers. Customer demands concerning automatic notifications is increasing, but is currently something that TPL 2 cannot provide its customers. Therefore, TPL 2 is not able to meet this demand.

Furthermore, TPL 2 has a customer portal where the customers can obtain more information about the deliveries, but it is mostly historical data instead of real time data. This portal is not used as much as it could by TPL 2's customers. Also, the industry is very IT intensive, which, according to TPL 2, makes changes and adaptions to customers' demands difficult to implement. The system that TPL 2 uses can be seen as rigid, and it would be difficult to adapt to the demands of one specific customer. Currently, information is only sent to Xylem, Emmaboda, and not to a sales company.

SUSTAINABILITY

TPL 2 has identified connections between economical and environmental sustainability. By increasing the fill rate its transports, they gain both economical and environmental benefits. They try to increase the filling degree of its transports by performing joint transports with products from different customers. This reduces the amount of empty transports, which has a positive effect on the environment, as well as positive economic effects. Furthermore, by purchasing more environmentally friendly vehicles, the operating costs for the vehicle is reduced, since these vehicles normally need less fuel. Moreover, the negative environmental effects are reduced as well.

TPL 2 report their work with sustainability yearly according to Global Reporting Initiative (GRI) and they also compile emission reports. Their goal is to reduce their emissions with 50 % until 2020. The firm is certified with ISO 9001 and ISO 14001. According to TPL 2, the customers presuppose that they work with sustainability. TPL 2 does not experience direct requirements from its customers, concerning sustainability. The customers do not follow up the work that TPL 2 performs with sustainability. TPL 2 does also not believe they gain competitive advantages by work specifically with

sustainability. They have tried to communicate zero-emission-freight but that did not have any particular impact.

4.2.3 TPL 3

TPL 3 is part of a larger Group, and handles global transports. Its largest market is France, but they have about 300 employees in the Nordic countries. They offer only transport by air and sea, and are one of the leaders of these segments in Sweden. The company offers customized solutions and a wide range of additional services, such as warehousing, for its customers.

RELATIONSHIPS WITH CUSTOMERS

Their customer base is made up of customers of varying sizes, and from different industries. The larger customers have a key account manager assigned to them, responsible for handling the communication between the customer and TPL 3. The customers who hire TPL 3 may be both exporters and importers, i.e. both the firms exporting its products and that firms that import products from other countries. TPL 3 aims to have long and close relationships with its customers TPL 3 seeks partnerships for contemporary development.

INFORMATION EXCHANGE

TPL 3 defines its delivery precision as if its transports are delivered according to predetermine ETA:s (Estimated Time of Arrival). Transports that arrive before scheduled time are considered on time. What is considered in time varies between transport by air and by sea. The goal for what delivery times to perform is decided on, in agreement with the customer, which means that it can differ between different customers.

TPL 3 compiles statistics for each customer individually. The information contains number of shipments, weight, cost, divided into categories of import, export, sea and air. A performance report is sent to its customers containing this information. The data is standardized but they do have ability to make customizations. The information that is being sent is perceived as being sufficient for the customers. The larger customers also have the opportunity to have their own web-based customer portal where they can access information regarding their transports. Xylem currently uses this service. TPL 3 has an EDI-connection with Xylem. Monthly statistical reports are sent only to Xylem, Emmaboda, but not to specific sales companies.

Every shipment is followed up to make sure there is no deviation. If a deviation occurs, shipper and receiving company are informed about the deviation. Deviations are registered, accompanied with the cause of the deviation. These deviations are registered manually, and reported directly to the customer. If there are many deviations for a destination TPL 3 take actions and will change carrier for this destination. This is an example of how TPL 3 works proactively with its transports.

SUSTAINABILITY

TPL 3 is certified with ISO 9001, ISO 14001, OHSAS 18001 and IiP. They also have global goals objectives regarding sustainability within the Group. According to TPL 3, it is a must to work with sustainability to be able to stay on the market. The company has a special department that works with sustainability improvement. In the offices they have procedures to reduce material waste and they also work a lot with increasing the fill rate of their transports. When they purchase transport services from other actors, the services are classified according to how the actors answer to an environmental survey.

TPL 3 does experience that customers have demands regarding sustainability. TPL 3 has performed a couple of projects in collaboration with Xylem regarding sustainability with great success. TPL 3 means that Xylem has strong focus on sustainability.

4.2.4 TPL 4

TPL 4 is a global company, based in the United States but is operational in about 220 countries. They have approximately 400 000 employees. Because of the company's focus on express deliveries with an increased level of statistical reporting, its prices are somewhat higher than that of competitors. Customers pay for what they get, which is an express delivery. This TPL always aims to work closely with customers, and its express deliveries mean that the transports are handled from door to door. However, transports are routed through some specific locations, and the use of "delivery locations", where products to many different customers are delivered, and customers collect their items, is being increasingly used. There are several hubs of importance throughout the world, for example Cologne (Köln) in Germany, and Sturup, Malmö, specifically for flight transports.

This TPL is an important player within its markets, especially within that of airplane transports. TPL 4 also describes how they sell space on their flight transports for other transportation companies. Within other means of transportation, such as car transportation, the competition is much greater. This is because that there are many more firms transporting by car than by airplane, making the total supply of transportation services within this market bigger.

RELATIONSHIPS WITH CUSTOMERS

Since Xylem mostly transports larger products than handled by this TPL, TPL 4 state that they are probably not the most important provider of goods for Xylem. However, Xylem is seen as an important customer for TPL 4.

INFORMATION AND EXCHANGE

This TPL is at the forefront of statistical reporting concerning its transports. Other competitors within the industry have also improved their handling of information and reporting, but it, according to TPL 4, the other TPLs still have work to do. TPL 4 collects a great amount of statistical data surrounding its transports. Every package is followed up daily, leading to a highly detailed understanding of the company's transports. Every package is scanned at every possible terminal, and each package has a separate tracking number. This extensive collection of data is regular for the express deliveries, but is to some extent the situation for other transports as well. Because of the fact that the company owns the majority of the whole transportation process, such as the trucks, airplanes, and terminals, it simplifies the process of the data collection.

When the customer orders a transport, the cost of the transport as well as the estimated time of arrival is notified to the customer. Statistical reports concerning the transports are communicated to the customer once each month, to those customers that want these reports. These reports concern information regarding every single package sent. The reports contain deviations and transports that have failed to deliver on time, as well as the reason for the deviation.

If demanded, each customer can receive notifications sent automatically concerning delays or deviations of its transports. This extra service does not cost anything in addition to the original price. These notifications are usually sent by mail, and enable the customer to have a highly detailed overview over its transports. This service can also be expanded to include information and notifications being sent to the receiving actor, so that information concerning deviations can be sent in several directions; both to the producing company (usually the customer buying the transporting services from TPL 4) as well as to the receiving company. This does not either imply an additional cost, but merely is an optional addition to the original service.

Communication with customers is usually handled via e-mail or a web based customer portal. Through the portal, customers can receive comprehensive information and status of transports its transports, for every single package sent. As previously mentioned, larger customers also have their own contact person at TPL 4.

SUSTAINABILITY

A key definition of sustainability for TPL 4 is that transports arrive on time, and that their shipped goods are intact. Further analyzing sustainability toward environmental aspects, TPL 4 mentions that their work toward environmental sustainability is something that is handled on a global scale. However, the company is not certified according to any ISO standards.

TPL 4 says that their company is one of the leaders within working with environmental sustainability, but that customers have during the last couple of years influenced the company more toward sustainable development; some customers more than others. Most customers are satisfied with a yearly report concerning sustainable development, and do not demand specific actions be taken.

4.2.5 TPL 5

TPL 5 is a smaller company than the other TPL:s. TPL 5 has roughly 8000 employees and is present within Europe. They provide logistical transportation services, as well warehousing and storage options for its customers. TPL 5 transport products by sea, road and air. TPL 5 transport products mostly within Europe, but also to some extent outside of Europe.

RELATIONSHIPS WITH CUSTOMERS

Xylem has been a customer to TPL 5 since 1999. Xylem is seen as one of the most important customers for TPL 5. Therefore, some adaptions within TPL 5's business have been made to meet the demands of Xylem. For instance, traffic changes have been made in order to meet Xylem's requirements concerning the lead-time for delivering products to the Netherlands. TPL 5 handles Xylem's transports from the distribution center in France to end customers in various places within Europe, and thus never carries transports directly from Xylem, Emmaboda. The communication with TPL 5 is always handled with the distribution center Metz, and never with Xylem, Emmaboda.

The most common agreement between TPL 5 and its customers is the "regular" transport in which no specific delivery time is decided. Instead, the delivery time is calculated as a standard lead time for the destination country. The arrival time is specified as a date, but not an exact time during the day. Xylem uses this agreement for roughly 95% of its transports that are handled by TPL 5. However, TPL 5 also offer a "premium service", in which the exact time during a specific date is specified as the estimated arrival time. This service costs more than the more regular solution.

INFORMATION EXCHANGE

Information regarding transports can be sent to customers monthly. This information contains similar information like that of the other TPLs, for instance the number of packages sent, the weight etc. There is also a possibility for the customers to use a track and trace service to trace their transports via Internet. In the case of exceptions/failed deliveries an e-mail notification is sent to the shipper. TPL 5 handles this manually. TPL5 do usually not communicate with a specific sales company, but instead information is sent to the distribution center in Metz.

Information regarding transports is only sent to receivers on specific requests of the shipper. Furthermore, TPL 5 has the ability to send information to Xylem's sales companies, however such an option is only available if the transport is considered a "premium service". Thus, the possibility of letting the sales companies receive notifications concerning transports is only possible when if paying extra to obtain the "premium service".

TPL 5 currently has a functioning EDI-connection with TPL 5, that lets Xylem place their orders through this connection. However, a working EDI-connection the other way around, in order for TPL 5 to be able to more efficiently communicate with Xylem, is under investigation. TPL 5 experience that some of its customers demands information that TPL 5 cannot provide. This information includes

specifications about the contents of the cargo that is being transported, and information concerning the transports prior to when TPL 5 take over responsibility of the transports.

SUSTAINABILITY

TPL 5 are certified according to ISO 9001, and they are working toward being certified according to ISO 14001. TPL 5 work with optimizing the fill rate of its transports. The carbon footprint is proportionately higher on short distances because the part of "empty runs" in percentage is higher than on long hauls. TPL 5 has provided carbon footprint reports for 2010, 2011 and 2012. Those reports were done manually. Currently, TPL 5 is working to implement an automated report.

	TPL 1	TPL 2	TPL 3	TPL 4	TPL 5
Monthly statistical reports	Yes	Yes	Yes	Yes	Yes
Manual track and trace	Yes	Yes	Yes	Yes	Yes
Possibility of automatic notifications	Yes	No	Yes	Yes	Yes
Sends information to sales companies	No	No	No	No	No

Figure 4.2 Information sharing possibilities provided by the different TPLs

4.3 Sales companies

Sales companies in Australia, Canada, South Africa, UK, and in the USA have been interviewed in purpose to gain understanding of their business, how they communicate with customers and how they experience complaints from customers. The results from these interviews are presented below.

4.3.3 Sales Company – Australia

The sales company in Australia consists of 14 different branches, located in a total of 14 different locations. These 14 locations consist of 2 supply warehouses in Sydney and Perth, and 12 service centers.

CUSTOMERS

The customers are mainly from the mining industry, water treatment industry or civil engineering.

COMPLAINTS REGARDING DELIVERIES

A customer survey, recently done by Xylem Inc., indicated that end customers are disappointed by not being notified about delivery deviations.

INFORMATION EXCHANGE

Since this sales company imports products from other parts of the world, it is mainly in contact with TPL 3. The sales company receives information from TPL 3, and has a system that filters the incoming information for deviations. This enables the company to inform its customers if deviations and delays occur. A reason mentioned for why customers may still be dissatisfied with the communication is that there are no clear routines concerning how and when this communication with customers is to take place.

When an order is placed, no exact delivery dates are assigned, only estimated due dates. The contracts with the TPLs define the delivery to be in a certain period of time, with the possibility of deviation within a certain percentage. For instance, the delivery of a product may be defined as being between 49 and 56 days.

The communication with Emmaboda is handled using e-mail. So is the communication with customers.

SUSTAINABILITY

Sustainability is linked to the concept of being able to provide product of good quality to its customers. The sales company, since located in Australia where there are many regulations regarding transportation of various materials within the country, receive specific demands concerning the supply of certain products in certain packaging to fit the requirements of a certain area in the country. In order to be able to deliver to some areas of the country, products need to be packaged in certain sustainable ways, and these are the requests that this sales company experiences from its customers. From an environmental standpoint, the company aims to have a focus on the recycling and reuse of materials within the firm.

4.3.5 Sales Company - Canada

CUSTOMERS

The main customers are from the municipal, or government, sector. They also sell to independent distributors. The sales company states that they have long-term relationships with their customers, since many of the customers require maintenance of the products afterwards.

COMPLAINTS REGARDING DELIVERIES

Canada experiences that many customers do complain about deliveries being late. Therefore, they cannot satisfy their customers. Customers complain that delays will delay their own projects, and that the delay of repair parts affects their maintenance of their products. The sales company states that a possible solution could be to see over the TPLs and the shipping lines used.

The customers complain through the representatives at the sales company responsible for the communication with the customer. Complaints are forwarded to the representative at Xylem, Emmaboda.

INFORMATION EXCHANGE

The communication with other companies is mainly handled by e-mail. However, orders are transmitted from Emmaboda to Canada via EDI. Information regarding transports are sent by e-mail from the TPLs to the sales company. The sales company can thereafter manually examine the information to identify deviations in the deliveries. The communication with Xylem, Emmaboda, apart from the orders, is handled, in 95% of the time, via e-mail.

SUSTAINABILITY

The sales company in Canada is certified according to ISO 9001 since 2008. The sales company in Canada defines sustainability as using resources efficiently and efficiently in the working environment, whether it concerns energy or human beings. They say that they work with sustainability by recycling paper or plastics, and not spending that much money on consumer products. A real impact concerning sustainability can come about from serious commitment from top management, in this way affecting the whole company.

4.3.4 Sales Company - South Africa

The sales company in South Africa imports products from many parts of the world. They distribute products in Sub-Saharan Africa as far north as the Congo. The sales company communicates with TPLs on daily basis, and they mostly use only two specific TPLs.

CUSTOMERS

60% of the customers are within the export market that is the customers are in African countries outside of South Africa. 70% of the customers operate within the mining industry, in different countries. The use of distributors means that the sales company in South Africa does not communicate directly with the majority of its customers, since these communicate with the distributors. However, the sales company is responsible for some customers in South Africa alone.

COMPLAINTS REGARDING DELIVERIES

The most common complaint concerns the lead-time of the deliveries, and not the lack of information regarding transports. There are no complaints concerning transports delayed. The main complaint is thus the long lead-time for the products. Since there is no distribution center in Africa, the lead-time for products to end customer is very long. Many products take several weeks to transport. Complaints regarding lead times occur either if the product is transported through South Africa or if they are transported directly. If customers do complain about delayed deliveries, this might be due to internal issues within the sales company in South Africa.

Some competitors have shorter lead times, due to higher stock or local distribution centers in Africa. Increasingly

Recently, a Chinese competitor has entered the market, competing more with price than before.

INFORMATION EXCHANGE

The sales company is satisfied with the information flow concerning transports. They use a web portal where they can login directly and follow the transports. In this way, they can manually see delays if there are any.

Order placement to Emmaboda is handled through an EDI-connection. One person at the sales company is responsible for the communication with Emmaboda. There is also one person responsible for the communication with each distributor. An EDI-connection, like the one with Emmaboda, is currently being established between the sales company and the distributors.

SUSTAINABILITY

Certified with ISO 9001 and currently working to be certified according to ISO 14001. The sales company first defines sustainability as assuring a good quality and long life cycle for the products. Sustainability also means offering a good service to the end customer.

Regarding environmental sustainability, the sales company is currently in a project with the aim of reducing air freight usage by 20%. Environmental sustainability is an important issue that they work with in a pro-active way. This is exemplified by the fact that environmental sustainability is part of the contracts that the sales company has with its distributors, so they are bound to work in accordance with what is agreed regarding environmental sustainability. The sales company also has policies restricting the use of certain products that are harmful to the environment. The sales company does however not at the moment experience that the companies with which it have business relationships affects the way that the sales company works with sustainability.

4.3.1 Sales Company - UK

TRANSPORTS

The distribution center in Metz, France, handles the contacts and booking of all the transports to end customers in the UK or Ireland. The transports are either direct transports, usually large products with longer lead times (a couple of weeks) whose delivery time is allowed to differ somewhat compared to more essential deliveries, or transports through the distribution center in Emmaboda, via storage in

Metz, to the end customer somewhere in the UK or Ireland. These shipments are usually of a larger volume of products, and the products are more crucial and therefore customers accept less variation in delivery times. The problems that the customers in the UK and Ireland are reporting to the sales company are primarily connected to these indirect shipments going through Metz.

CUSTOMERS

The customers in the UK and Ireland consist to 70 percent of water companies that basically have local monopolies within the water industry in the different regions in which they are located. The companies work with issues regarding water supply, clean water, and so forth. They are privately owned, but operate regionally through the UK and Ireland. The majority of the shipments that go to the water companies are shipped via the SDC in Metz.

The relationships with the water companies are seen as long-term relationships, since the water companies are the biggest customers for Xylem in the UK and Ireland. The remainder of the customer base is approached with more short-term oriented relationships.

COMPLAINTS REGARDING DELIVERIES

Not many customers complain about the deliveries of its products. The deliveries that are reported to the sales company mostly concern those transports that go through the storage in Metz. The complaints are first reported to the responsible salesmen, and then passed on to the service department. The reason, according to the sales company, for the problems arising mainly during transports that go through Metz, is that the TPLs must hire subcontractors and other smaller TPLs, in order to reach end customers. This leads to more actors being involved, and thus a greater risk of information being lost or distorted. Not all TPLs taking part in the transportation are able to provide satisfactory information.

The complaints regard the fact that customers experience a low transparency and visibility concerning the reports that they receive regarding transports. The reports that they receive from TPLs are lacking in detail and do not provide a clear picture of the transportation process, e.g. what products have been shipped, how many, when they have been shipped and when they will arrive. The problem is therefore that TPLs do not present accurate and comprehensive data reports regarding transports.

The sales company in the UK is working with putting pressure on TPLs, asking what hinders the TPLs to present the information demanded by customers. One potential reason for the TPLs not reporting comprehensive data for the transports is that the different TPLs taking part in the transports have different information technologies, new ERP systems are mentioned, that make coordination of accurate data reports difficult.

INFORMATION EXCHANGE

The sales company communicates with Emmaboda, Sweden via a personal contact. The communication with Sweden is handled mostly using e-mail. Furthermore, the sales handlers at the sales company have direct contact with the Emmaboda regarding orders. The communication with SDC in Metz is handled mostly using EDI-methods, but this is not used for communication with Emmaboda, Sweden.

The communication with customers, on the other hand, is handled mostly using e-mail or physical papers. The customers also have contact with the sales company's logistics department and the sales engineers handling support and maintenance. Important to note is that end customers never communicate directly with the distribution center in Emmaboda, but always with the sales company, regardless of if they receive direct or indirect transports.

SUSTAINABILITY

The sales company has a very serious approach to the term sustainability, and they are certified according to ISO 14001. They currently have a developed CSR (Corporate Social Responsibility) program and they develop various data sheets concerning the carbon impact of the company, their materials usage, and how new technology might affect their business.

It is said that the company has its best chance of affecting other actors downstream within their supply chain to work with sustainable development. They already do this to some extent: the relationships with their TPLs already contain an aspect of sustainability, since the TPLs present data on carbon impact. However, relating to suppliers downstream in the supply chain, the sales company sees a potential for increased pressure regarding e.g. what materials that are used and how they work with sustainable development.

Primarily the water companies that actively put pressure on the sales company affect the sales company in its work with sustainability. Generally, the UK is seen as being in the forefront when it comes to working with sustainability alternative fuels and so forth.

4.3.2 Sales Company – USA

The sales company in Australia consists of 14 different branches, located in a total of 14 different locations. These 14 locations consist of 2 supply warehouses in Sydney and Perth, and 12 service centers.

CUSTOMERS

They sell the products to end users, but also to contracted distributors that sells Xylem's products exclusively. Anyhow, the customers are in all sort of business; construction, mining, waste water, treatment, pulp and paper, entertainment water parks etc. They try to create long-term relationships with their customers and keep them as customers so that they buy spare parts for the product from Xylem and not from any of their competitors. In order to maintain their customers they have service contracts, good warranties and advertising.

They measure on time delivery; required delivery date, and promised delivery date. They want to achieve 95% on time delivery (promised delivery) but they are performing 90-95%. Regarding required delivery they are preforming 70%. They are measuring in 10 lines and see how many of them those are in time.

COMPLAINTS REGARDING DELIVERIES

The sale company in the US experience that they receive a many complaints from customers. Most of the complaints are about to long lead times before they receive their products. Secondly they receive complaints regarding deliveries that are not received at the time that are promised and thirdly they receive complains about the quality of the products when they are received.

The complaints are communicated to the sale company through the customer service department by phone or email. By routine they also ask the customers after the deliveries are completed, whether they are happy with the product and services or not? If the customers are unhappy but have not communicated it, they usually announce the complaints after this. They experience that the customers have demands regarding receiving the products at a specific time especially if the delivery is on the implement date. They also have high demands about the qualities of the products.

The complaints from the customer are forwarded to the distribution center in Emmaboda through specific order contacts at Emmaboda. 85 % of the communication is performed through mail, and the remaining 15 % is performed by phone, where they tell the distribution center in Emmaboda what the complaints are regarding, what they need to improve, how important it is to make the specific improvement etc. The sale company is thinking that there should be more emphasis on reducing

manufacturing cycle time and lead-time, in order to reduce the complaints from customers. One way of doing this is to have larger warehousing.

INFORMATION EXCHANGE

The information that they exchange with their customers regards mostly technology support, delivery information, pricing etc. They have a web page where customers can see inventory status, where they can see warranties, manuals and make orders. The communication with Emmaboda goes mainly through a new version of EDI, which is connected to an ERP system. All orders are process through this and then are transferred back to the sales company. They communicate with TPLs and customer breakers through EDI as well, but not with the customers.

All sales companies and distribution centers are supposed to have yearly meetings, which also is a way of communicating to the different companies within the Group. This has, unfortunately, not happened with Xylem, Emmaboda, and the sales company in the U.S.A. for two years. However, the sales company feels that this would be good to have.

They think that the orders need to be more planned; the required shipping dates are not always realistic right now. They do use data from deliveries. Every time they fail with a delivery they try to see the cause and see how they can prevent it in the future.

SUSTAINABILITY

They define sustainability as to be as green as you possible can. Use as little energy as possible. They are pushed to work with sustainability on a corporate level, but not so much on an individual level. They work with sustainability by creating as little waste as possible, for instance by using as little paper as possible.

5 Analysis

In this chapter of the thesis, the empirical data from the case study will be applied to the analytical framework, in order to analyze how a company can improve their physical distribution service and sustainable profile through its connections to other companies acting as intermediaries. In able to do so, the four research questions will be analyzed and answered from the four perspectives presented in the literature study: Business relationships, Information flow, Customer service and Sustainability. The analysis of each research question will end with a closing discussion to combine different aspects and to maintain a comprehensive discussion.

5.1 Research question 1

"How can a business relationship between two companies be described, where one of the companies acts as an intermediary between the other company and an end customer?"

The following paragraphs will discuss how a relationship between a company and another company, which has the role of an intermediary, can be described, by analyzing the extent of integration between them, what distances that might exist between them and the impact on the surrounding network of other relationships.

5.1.1 Relationship categorization by the extent of integration

The relationship between Xylem and a TPL can be seen as more than just a transactional relationship, since it includes more than just short-term mindedness, or a low interest of understanding. Xylem interacts with all their TPLs on a regular basis, and is generally seen as one of their most important customers for all the TPLs figuring in this thesis. Both parties state that they are interested in adapting to each other's businesses, in order to perform a high level of physical distribution service, and the relationships are not only based on a matter of price. Examples of adaptations in the relationship between Xylem and TPLs are that Xylem has a key account manager at every TPL, and that TPL 5 has in some cases changed their transport routes to meet Xylem's requests of shorter delivery times. Another example is that TPL 3 has adapted its EDI-system to match Xylem's requests and ways of working.

These adaptations show that the relationships could be thought as being integrative relationships, rather than a transactional relationship. However, the relationships involve rather undifferentiated services, and adaptations are only made in order to improve the delivery of the products. Also, even though Xylem is a big customer to all of the TPLs, the TPLs state that they are not totally dependent on Xylem, since they will continue with their business in a similar way even if Xylem would not continue being their customer. Furthermore, the majority of the interviewed TPLs have not performed any major adaptations to meet Xylem's demands. This implies that the relationships between Xylem and the TPLs cannot be seen as an integrative relationship, since integrative interaction usually involves larger investments and adaptations; for instance focusing on different production layouts or different product designs to fit the requests of both actors. This discussion implies that the relationships between Xylem and a TPL seem to be mainly categorized as facilitative relationships, which implies a level of integration between the companies that is limited to concern services around the product, rather than the product itself. Furthermore, Xylem mostly uses transports that are not classified as premium services. For instance, in the case of TPL 5, less than 5% of Xylems' shipments are what they classify as premium services, which mean specific delivery times for an additional cost. Also, Xylem does not focus on costly express deliveries, since TPL 4, which focuses on express deliveries, is not their most important TPL 4. Thus, price can still be said to be a factor that Xylem considers, which could indicate the relationship being more of a transactional relationship. However, this combined with the fact that adaptations do occur within the relationship, indicate that the relationship between Xylem and a TPL is a facilitative relationship.

However, the relationships to different TPLs involve different extents of integration. Some of the relationships, as the relationships to TPL 1, 2 and 4 have not made any extensive adaptations to Xylem in particular. All TPLs claim that they are willing to adapt their business to their customers and that they are looking for long term relationships, but these adaptations seem mostly to consist of different product offerings with various associated services. One example is TPL 1 and 4, which can offer express deliveries if the customer requires it, albeit to a higher price. Even though all TPLs can be categorized as facilitative relationships, the relationships seem to involve different extents of integration and maintain a touch of a transactional or an integrative approach. The fact that none of the TPLs' business existence is dependent on Xylem, and that Xylem limited the cooperation with TPL 2, when they did not fully satisfy Xylem's expectations and requirements, implies that the relationship between Xylem and an individual TPL is not considered as highly prioritized from either party. Xylem depends on the resources and activities that the TPLs provide, but does not depend on the TPLs themselves.

The relationships between Xylem and the sales companies are of closer nature than the relationships between Xylem and the TPLs; and therefore more dependent on each other. The information flow to customers goes through the sales companies, while the products are more often transported directly from Xylem to the customers. Also, some of the sales companies provide additional services such as warehousing products and maintenance and support for end customers, which means that they have a further influence on the total offer and on the customer satisfaction, which in turn leads to further dependency between Xylem and the sales companies. In order to reduce distances between Xylem and the sales companies and to make the cooperation work, various kinds of adaptations have been made to one another. Each sales company has, for example, a person who is responsible for the communication with Xylem. Furthermore, and EDI-connection has been established with three out of the five interviewed sales companies, leading to a higher degree of integration, and more efficient information flow. The fact that both Xylem and the sales companies are parts of Xylem Water Solutions naturally makes the dependence between Xylem and a sales company even stronger and also makes it easier to adapt to each other. Because of this direct dependency to one another's performance, the relationship between Xylem and the sales companies can be characterized as an integrative relationship.

However, since the distribution center in Emmaboda is not the only distribution center providing the sales companies with products, the sales companies cannot become too dependent and adapted solely to Emmaboda, since it could affect the relationships the sales companies have with other distribution centers within Xylem Water Solutions negatively. Building upon this reasoning, the relationship between Emmaboda and a sales company could be seen as a light form of an integrative relationship.

5.1.2 Distances within a relationship

Xylem's problems and hurdles regarding physical distribution service can be described as having the origin in different kinds of distances in the relationships with the companies acting as intermediaries. In order to reduce the distances and solve the problems, these distances must be identified and understood. Therefore an analysis and identification of the distances, both between Xylem and the TPLs and between Xylem and the sales companies that might cause problems with physical distribution service will be made.

The main distance in the relationship between Xylem and the TPLs is the technological distance. It is apparent that the information received from the TPLs is not satisfactory for Xylem. In some cases the format of the information could be more satisfactory than at present, and sometimes the pure technological aspect, as whether the information is received via e-mail or via telephone, can cause Xylem to be dissatisfied. This correlates with a technological distance, where neither Xylem nor the TPLs fully bridge the technological gap that exists between them. In one case, the TPL has adapted an

EDI-connection to match Xylem's demands to a greater extent. This has proven to be an effective method of minimizing the technological distance.

Furthermore, it could be argued that cultural differences affect in what way information is shared. Xylem and the TPLs are all multinational corporations, although from different countries and different work cultures. It could be that specific ways of handling transports originates from the fact that a company is from a certain country. The way that information flow is handled in the country of origin could also define how this process is handled in other countries where the company is active. The social distance might also cause other distances to arise or otherwise be affected.

One of the most important distances is that of a social distance, which can be identified by the fact that Xylem and the TPLs are not fully aware of each other's needs and possibilities regarding physical distribution service. Xylem does not know the full extent of what capabilities the TPLs possess and what adaptations they have incentives to make, while the TPLs do not know about Xylem's possibilities and requirements. Neither Xylem nor the TPLs know how they can cooperate in another way to benefit both companies' interests. An example of this is the fact that the majority of the TPLs, as described in Figure 4.2 in the case study, provide a service which can send automatic notifications to Xylem in case of delayed transports. Such a service would be beneficial for Xylem has been stated by Xylem as being of interest, but the fact that this service is currently not used by Xylem indicates a social distance between Xylem and the TPLs.

Xylem's customers are scattered around the globe, making the geographical distance essential to include. By cooperating with sales companies, the geographical distance to the customer is reduced, while the geographical distance between Xylem and the sales companies is still considerable. The physical flow between Xylem and customer usually does not involve the sales companies. The long distances between Xylem and the customer makes transportations more difficult, causing efficient physical flows to become more important. The geographical distance becomes even more difficult to handle if customers often demand quick delivery of products or if these customers expect Xylem to be flexible and able to change their orders with little notice.

Closely related to this aspect is the time distance. Making the information flow more efficient with sales companies located far away in different time zones is difficult. This difficulty causes the information flow with the end customers to be negatively affected. For instance, if the end customers purchase time critical products and therefore demand quick and efficient information flow, a significant time distance may impair the possibility to deliver the information in time to the end customer, due to the difference in working hours. This time distance is one of the reasons to introduce sales companies in the first place, as it is through the sales companies that the time distance to the end customer can be reduced.

A social distance can also be identified, even though Xylem and the sales companies are within the same Group. The existence of such a distance is indicated by the statement from the sales company in the USA, where discontent was conveyed regarding omitted meetings in the Group. These meetings are believed to be necessary, in order to understand each other's business.

5.1.3 A network of relationships

There are many companies doing business with Xylem, with different connections and relationships between each other. These relationships seem to be interdependent, as when something happens in one relationship, it will affect other relationships that are directly or indirectly connected to each other. The relationship between Xylem and a TPL is affected by changes in the relationship between Xylem and another TPL. For example, when TPL 2's services to Xylem were reduced, this promoted possibilities for the other TPLs, since the deliveries still had to be done. What activity one TPL is allowed to perform for Xylem defines the possibilities for the other TPLs. Today, one single TPL is responsible

for the delivery to one specific area, effectively blocking other TPLs from delivering to that specific area.

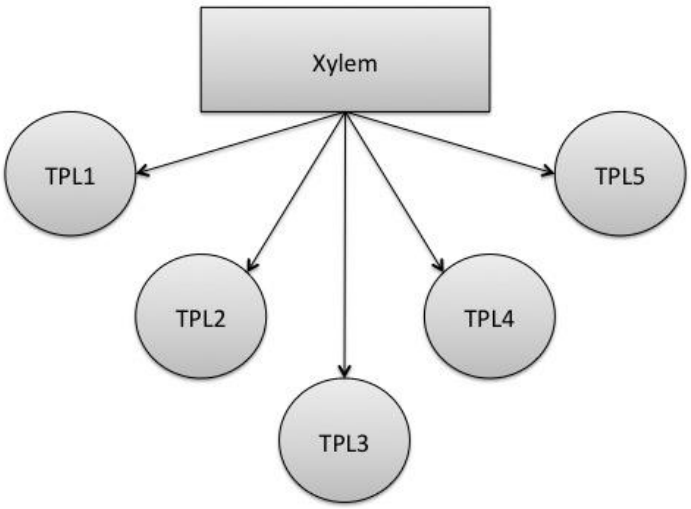
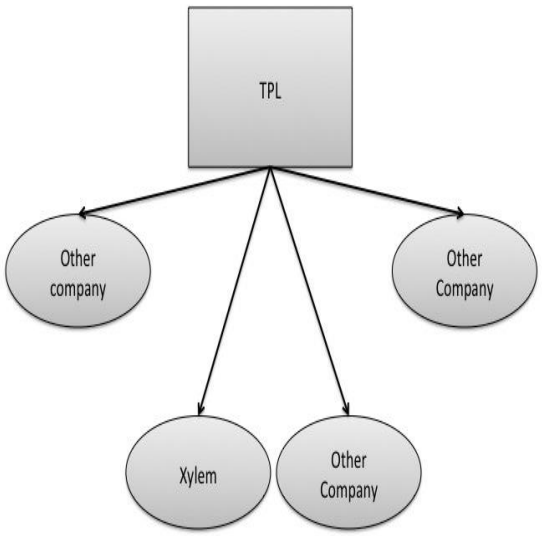


Figure 5.1 Xylem cooperates mainly with five TPLs

The interdependence between the relationships does not end with Xylem's closest counterparts. The TPLs have other customers than Xylem and the sales companies have other suppliers than Xylem. The relationships between these more distant companies may also have an impact on the relationships closer to Xylem. For instance, both the TPLs and the sales companies must take into account all of each other's customers and suppliers when designing their processes. It will probably be difficult for a TPL or a sales company to adapt solely according to Xylem's requirements, since both the TPLs and the sales companies have other customers or suppliers.



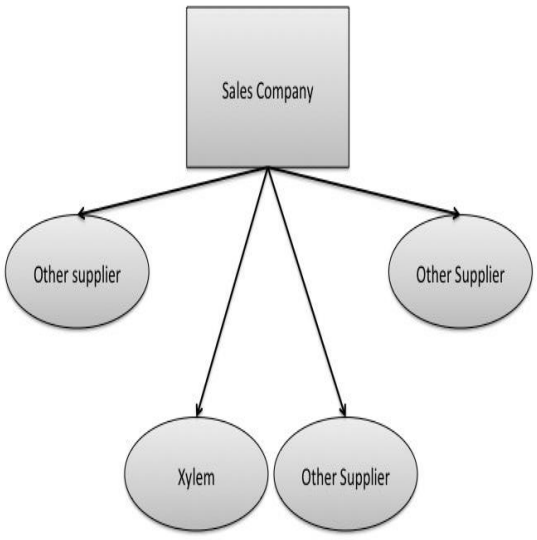


Figure 5.2 A TPL does not only have Xylem as a customer. **Figure 5.3** A sales company has more suppliers than just Xylem.

Arguably, the most critical interdependence is the connection of the relationship between Xylem and a TPL with the relationship between a sales company and the end customer. The fact is, that the only reason that Xylem has a relationship with a TPL is to be able to deliver products to end customers. If the end customers does not place orders with the sales companies, then there would be no need for any products to be delivered; Xylem would then not have a business relationship with a TPL. Furthermore, if the sales companies in any way erroneously handle the relationship with the end customers, Xylem

might lose these customers and the relationship with the TPLs will no longer be needed. Thus, the relationship between Xylem and a TPL has a strong direct connection with the relationship between a sales company and an end customer.

The previous paragraph describes a complex scenario within the business network. Xylem's end customers indirectly affect the incentives of the TPL. While satisfying Xylem, by providing well-performed deliveries, the TPL is indirectly satisfying an end customer. This scenario implies that the TPL performs a service that is of great importance to Xylem, but the level of integration within the relationship states that the relationship is not seen as quite as important as its services imply. Furthermore, the empirical data supports that competition has increased on several of the markets worldwide, where customers increasingly demand short lead times for the deliveries. The performance of a TPL is therefore of uttermost importance for Xylem, since a failure to deliver on time might result in customers leaving Xylem and purchasing its products from competitors instead.

The examples of interdependence above are only a small selection of how relationships within the network affect each other, but they imply that all relationships within the network affect the other relationships to some extent.

5.1.4 Closing discussion

In the case study performed in this thesis, two distinct types of intermediaries have been analyzed, and the nature of the business relationship has been found to differ depending on the role of the intermediary. There are some business relationships that cannot clearly be placed into one specific category, regarding the level of integration in the business relationship. Rather, a relationship can sometimes be seen as being somewhere in between two categories, containing aspects that belong to both of these.

In the case of a relationship between a producing company and a TPL, it can be characterized as a facilitative relationship. The service of transportation and logistics seems to be considered mostly as an undifferentiated service, which is not adjusted significantly for a special customer and that is a decoupled service from the product instead of being a part of it. The TPLs usually have standardized procedures for most of their customers, and the possibility to adapt processes to a single customer is limited. A sales company is more dependent on the producing company and its products, and is therefore this business relationship is of a higher level of integration and can be said to be more of an integrative business relationship. However, the way in which end customers communicate with a producing company, in the case of this thesis through a sales company within the same Group, could be thought to differ between other situations. Other companies might use local distributors that are not part of the same Group; in this case, the same level of integration might not explain the business relationship. The more interesting relationship is therefore that of the relationship with a TPL, which could be said to be more general, and has a more direct effect on the physical distribution service, since they handle the transports.

A TPL always operates between at least two companies, and is seen as link between these two. Therefore, the mere existence of a TPL can be seen as the means of bridging the distance between a customer and a supplier. In this sense, the intermediary is more often than not seen as a means for a producing company to achieve its own goals of distributing products to customers, rather than being a company with whom close collaboration is established. The services provided by a TPL can be seen as necessary, rather than strictly value adding. This is supported by the empirical data gathered in this study, which indicates that the relationship with a TPL is seen as a facilitative, implying mutual adaptations only to a certain degree.

The most important distances that indicate this low level of integration are those of technological and social distances. A technological distance is clearly discerned from the current situation, as certain information is shared in different ways with different content within different business relationships.

Regarding the TPLs, an especial social distance is identified, which is grounded in the limited knowledge in each other's companies' possibilities and requirements.

As indicated above, an analysis of a single isolated business relationship, without taking other business relationships into account, will not provide a holistic explanation to the business relationship. This is extra important to consider in case of a relationship to an intermediary, since an intermediary, per definition, is a company that mediates the services between at least two different parties. Thus, relationships and the activities within them should not be seen as isolated from each other, but rather interdependent, where activities in one relationship will affect the other relationships that are directly or indirectly connected to each other, creating a network of interdependent relationships. Judging by the strong indirect connection between a TPL's performance and Xylem being able to satisfy its end customers, the role of the TPL should be seen as more important than today.

5.2 Research question 2

"How can the aspects of information flow be described within a business relationship between two companies, where one of them acts as an intermediary?"

The paragraphs below will analyze the information flow within this kind of relationship, by the use of the case study of Xylem. Initially the complexity of the information flow between the actors will be discussed. In order to describe the information flow further, it will then be divided according to the three characteristic levels that were defined in the literature study. These levels are as follows: information sharing, information quality and information technology. Information sharing and information technology will be analyzed conjointly, while the aspect of information quality will be treated separately.

5.2.1 Information complexity

Since Xylem is a company that uses intermediaries in their interaction with the end customer, Xylem and their end customers seldom exchange information directly between each other. There is, in other words, no direct information flow between Xylem and their customers. The addition of another actor between Xylem and the end customer causes the information flow to become more complex and varied. The complication arises from the fact that the information needs to be transferred to more than one actor, which, for example, introduces the possibility of delays in the relay of information. The information flow is therefore slower than if direct communication were to take place. There is also a risk that the information is altered in some way, due to the interactions of the intermediary in question. This might cause the content to change, as the intermediary may interpret the information in a different way than was originally intended.

This further complexity is interesting, as it has an effect on the final offer to the customer. The information flow in itself can be seen as a part of the customer service. A situation where the information flow from Xylem's intermediaries to the customer is inadequate therefore has a negative impact on the total value of the offer itself. Information flow is thereby a strategic asset that has an effect on the competitive possibilities of a company.

5.2.2 Information sharing and technology

Putting this research question into the context of Xylem and their TPLs, it can be noted that the level of information sharing differs between their different relationships with TPLs, where not all TPLs provide the same possibilities of information sharing. All of the TPLs provide monthly reports with data about their deliveries, which provides Xylem with the opportunity of following up their TPLs' distribution performance. However, the monthly reports are of different formats, which complicate the handling of information and the ability to find relevant data. The way in which information is shared thus differs depending on the TPL. Furthermore, the content of information from different TPLs is also different. This leads to a situation in which different information is received in different ways from different TPLs, which makes the handling of said information difficult and time consuming.

Another time consuming process for Xylem is to manually track deliveries, which all of the TPLs provide. This service is probably desirable for customers of TPLs with fewer shipments, but for Xylem, who ships about 58 thousand shipments yearly, the task of manually tracking every delivery becomes unmanageable. Xylem would therefore benefit from improved information sharing with the TPLs. However, not many of the TPLs have adjusted their business according to Xylem's needs. Only TPL 3 has implemented an EDI system with Xylem, which indicates on a closer relationship and increased collaboration. This precedence shows that it could be possible for the other TPLs to establish similar adjustments, although it might requires a closer relationship between Xylem and these other TPLs.

In Xylem's case, it is also important to have close relationships with their sales companies, since they have all contact with the end customers. Therefore, it is of essence that they have good information sharing between each other. Xylem claims that their information sharing with their sales companies is satisfactory. Using a special coordinator, as Xylem does with some sales companies, enables the relation to be closer and eases their information sharing. With an effective information flow, the possibilities for Xylem to inform their customers and receive enhanced knowledge about their customers will be strengthened.

Most sales companies also have EDI systems connected to Xylem's ERP system, i.e. one type of information technology, which enables an efficient way to exchange information between the companies. Therefore, the information sharing between Xylem and those sales companies is more effective than before. However, not all their sales companies have this EDI system; these companies have to inform Xylem manually each time, for example when an order is placed. This results in an inefficient way of sharing information, which might have a negative impact on the business, since it might be costly and the information sharing might be poor.

The effectiveness of the information flow is dependent on the level of standardization of the methods and routines; both which relate to the term information flow. Adding a third party to the business relationship complicates the communication and the information flow, since the communication might become problematic if the parties do not meet in a direct or easy way. In order to achieve good information sharing between two actors in a business relationship, there must also be a level of trust between the actors to facilitate the sharing of important and proprietary information. A higher level of information sharing therefore implies a closer relationship between the involved actors, as the two actors within the relationship have integrated their businesses to facilitate the information flow.

A more efficient information sharing process within a company's business relationships could be beneficial for both companies, since it could lead to a higher level of integration and improved collaboration between the companies. However, this increased dependence could also lead to inertia in the relationship, making it harder to change or break free from the relationship, which could become a disadvantage in the long run.

5.2.3 Information quality

The information that Xylem receives from their TPLs include everything that Xylem is interested in, but the quality of the information is low from Xylem's point of view. The information that is sent to Xylem is so extensive and rich in detail that it becomes difficult to handle; thus the information obtained from the TPLs is not thoroughly useful to Xylem. In order for Xylem to understand why the quality of the information received from the TPLs is poor, it is necessary to identify the gaps in terms of the characteristics of information quality: content, accuracy, recency and frequency. The overall data that Xylem receives from the TPLs is of good quality regarding the accuracy and frequency, since they receive comprehensive information every month. However, regarding the recency, the quality is poor from Xylem's point of view. The recency of the received data is hampered by the fact that Xylem only receives data once every month from certain TPLs. The data that then is received will be out-of-date and not as useful to Xylem. These deviations have already occurred and the customer has already

noticed it, which is undesirable from Xylem's point of view. Being able to receive automatic notifications from the TPLs regarding deviations in the transports would mean that Xylem would be able to notify their end customers of delays before they themselves realize that the transports are delayed. This would mean an improved information quality and thus an improved physical distribution service. Such a service, in which Xylem is notified automatically from the TPLs in case of delays, is actually provided by the majority of the interviewed TPLs: TPL 1, 3, 4 and 5. The reason for his service not being used by Xylem could be because of the social distance as previously described between Xylem and a TPL.

Even though the content of the received information from each specific TPL is in itself extensive and detailed, the content of information from different TPLs does differ. Different TPLs send information whose level of detail and content differs from other TPLs. This differing content, together with different ways of sharing information depending on the TPL, leads to unnecessary effort being put into coordinating information that regards the same issue. Thus, the shared information can be said to be lacking quality in terms of content as well, as the contents differ between different relationships, and is currently too extensive to be useful.

The notion of good quality of information can be thought to differ between different actors and companies, depending on what the demands are regarding the information; as Drucker explains: "Quality is not what the supplier puts in, it is what the customer gets out and is willing to pay for" (Drucker, 1985). For example, the information that TPLs provide their customers is often extensive and includes detailed information concerning each delivery, since most TPLs today have good knowledge about the products and their position. A problem that occurs when obtaining overly extensive information, and especially when delivered in different formats, are that the process of examining the received data becoming very time consuming. This may result in the fact that customers experience that the data is of low quality, even though the TPLs believe it is of good quality. Exhaustive and comprehensive information can thus be deemed low in quality, since it does not meet the requests of the customers. According to (Vanpoucke et al., 2009), comprehensive information is not the goal of the information flow, but rather the clarity and usefulness of the information shared. Thus, the quality of the information within a business relationship can be said to differ depending on the demands and requirements of the actors within the relationship.

5.2.4 Closing discussion

Information sharing and information quality, two aspects of information flow, are critical for success in the case of global operating companies with customers, and subsequently intermediaries, located in different parts of the world. When using intermediaries, the information sharing from company to end customer is complicated; the transferring might take time and the content might be changed in the process. Therefore, good information sharing is essential in order to ensure that the intermediaries operate in line with the company's visions and values. It is also necessary in order to understand each other's requests and needs. However, if companies achieve a high level of information sharing, it implies that they have a strong business relationship and more integrated business. It also improves the decision-makings within the companies and increases the knowledge about each other.

Today, it seems that companies have issues regarding the information sharing with their intermediaries, and also the quality of the information shared. The information sharing, regarding formats and content, often differs between different companies, which complicates the handling of information received. Furthermore, the information quality can be said to be lacking in quality, in sense of recency and content; the information is received after deviations have occurred, and the content of the information differs between different business relationships. The problems related to the information flow that were identified in the previous paragraphs derive from the distances that exist between a company and the companies acting as intermediaries. The lacking information sharing and

lack of information quality can be said partly to be effects of technological and social distances between the companies.

Furthermore, the scenario described in the analysis of the first research question, in which a TPL indirectly works to satisfy Xylem's end customers but does not handle the communication with these end customers, puts high demands on the information flow within the business network. If the end customers complain about problems that occur during the transports, this information must pass several actors before reaching the TPL and notifying them of an unsatisfactory delivery. Likewise, information from the TPLs has to travel past several actors before finally reaching the end customer. The long path that information has to travel in order to reach the end customer leads to increased risks of the information being delayed, or potentially altered along the way. A scenario in which the information quickly can reach the end customer and with fewer involved actors taking part in the sharing of information would be beneficial.

An improved information flow would enable a company to better monitor and keep track of the transports, in order to be able to work proactively with the transports, i.e. being able to identify where a problem occurs and fixing said problem before it is perceived as negative for the end customer. Thus, because of an improved information flow, it would be possible for a customer to notify its end customers of deviations before the customers realize that products are delayed.

5.3 Research question 3

"*How can a company improve the information flow in relation to connected companies which act as intermediaries?"*

In order to be able to improve the physical distribution service, the current situation with lacking information flow must be improved. The following paragraphs will discuss the possibilities for a company to influence the information flow within relationships to other companies acting as intermediaries.

5.3.1 Specify required information

The lacking information flow between the companies can be said to correlate with a social distance between the companies. Neither Xylem nor its connected business partners seem to be fully aware of what the other party can or cannot offer, or of what the other party requires. The information that Xylem currently receives from its TPLs lacks in quality, mostly in terms of recency. Thus a solution where notifications concerning deviations are reported automatically, as described in the previous research question, would be beneficial for Xylem. Judging by the fact that the majority of the interviewed TPLs do in fact provide such a service, but that Xylem does not use this service, does suggest that Xylem is not fully aware of the services provided by the TPLs. This can be seen as a social distance between the companies. A reduction of this distance would heighten the two parties' knowledge of the other, and provide a more effective basis for problem solving.

The lacking information flow between the companies can be said to correlate with a social distance between the companies. Neither Xylem nor its connected business partners seem to be fully aware of what the other party can or cannot offer, or of what the other party requires. The information that Xylem currently receives from its TPLs lacks in quality, mostly in terms of recency. Thus a solution where notifications concerning deviations is reported automatically, like described in the previous research question, would be beneficial for Xylem. Judging by the fact that the majority of the interviewed TPLs do in fact provide such a service, but that Xylem does not use this service, does hint toward Xylem not being fully aware of the services provided by the TPLs, i.e. a social distance between the companies. A reduction of this distance would heighten the two parties' knowledge of the other, and provide a more effective basis for problem solving.

Furthermore, as previously concluded, the information that is shared also lacks in quality concerning content, since different TPLs provide different content in the shared information. An improvement of the information flow would therefore be to receive the same information from every TPL. A way for Xylem to influence the information flow would thus be to clearly specify the information they require. By doing this, Xylem will realize what information can and cannot be shared with the TPLs. Furthermore, the TPLs might not be aware of what the specific requirements of Xylem are. Presumably, in many situations the companies are not aware of that the other party experiences that the information is of poor quality, why they do not improve it even though they have the ability to do it. By clearly specifying what information is needed, the social distance can be reduced. Hereby, the information quality can be improved, in the sense that exactly the right information can be sent, and also at the right time, if Xylem realizes that several of the TPLs can provide automatic notifications in case of delays.

An additional problem with unspecified data is the situation with some of the sales companies, where the order specifications do not include enough data to complete the order. Xylem should either require these sales companies to fill out standard ordering forms, or try to get these sales companies to adapt to Xylem's online ordering systems: in both of these cases, it will require the sales companies to fill in the required information. This will require the sales companies to adapt to Xylem's business, by making changes in their own, which can be a problem since some sales companies have contact with other production sites as well.

The content of the shared information will still differ depending on the company with whom the sharing is performed. It may be difficult to motivate one intermediary to adapt its information sharing specifically to Xylem. By reducing the technological distance as well, it will be easier to obtain the information that is needed.

5.3.2 Standardized information sharing processes

A way in which the technological distance can be minimized, and the information quality improved, is through implementing standardized ways of sharing information, using standardized information technology, with standardized content. Thus a situation would be established in which the problem with differing contents and differing ways of sharing information would be removed.

Such a bridging of the technological distance has been achieved by the TPL that implemented an EDI connection with Xylem, leading to an improved information flow between the companies. Such an EDI connection would let Xylem both place orders with the TPL, but also receive information regarding the shipments. A way of introducing standardized systems would therefore be to implement the EDI system that is in place in connection with TPL 3, with all of the remaining TPLs as well. The standardized processes will be less time consuming than their disparate routines that they have today. Using this standardized way of sharing information the social distance will also be reduced, since this will contribute to a more uniform and comprehensive insight in the other companies business and performance. This will in turn result in faster identifying and resolving of obstacles within the relationship. However, for the standardized system of information sharing to be useful and actually provide an increased insight into the other company's business, thereby bridging the social distance, it is important that Xylem specifies exactly what data they require. A standardized system of sharing uninteresting information is useless, and it must thus comply with the requirements of Xylem.

A standardized system that is currently in place at the sales company in Australia is a system that filters incoming information from TPLs, and extracts specific information regarding deviations. This results in a streamlining of the content to fit the needs of Xylem, and implementing this system would improve the information quality. However, this sales company mainly communicates with TPL 3, who already provides good information regarding transports. It may be that this specific system only fits TPL 3, and therefore, in order to on a greater scale improve the information flow, a standardized process for information sharing encompassing several different TPLs should be implemented.

Implementing a standard of information technology would involve an increased extent of integration between Xylem and the TPL, with a higher extent of dependency to one another and a closer relationship as a result. Because the relationship is a facilitative relationship with limited extension of adaptations, it is likely that the TPLs would not have the incentives to make this kind of investment. Since the TPLs have several other customers than Xylem, and have their own standardized methods of handling information and information sharing concerning deliveries, this could be a too big adaptation to one single customer to be profitable for the TPL. However, the services regarding transportation and logistics should not be valued as services around the products, as it seems to be in Xylem's case today, but as a part of the value of the product itself. With this changed point of view, the relationship between Xylem and a TPL would involve a higher degree of cooperation and adaptations to one another, and approach a more integrative relationship.

A higher degree of dependency and adapted activities might however be seen as a difficulty when both parties are more dependent on each other's performance and cannot control their business by themselves to the same extent. However, when cooperating with others, the companies get access to more resources and activities and can coordinate these in a way that would not be possible in other cases. With a higher degree of interaction follows a higher degree of utilization of resources and activities, which implies new possibilities for both actors.

To enable a more integrative relationship with the TPLs, the TPLs also have to have the incentives to do so. For example, by concentrating the collaboration more to some of the TPLs, Xylem would be a more important customer for each of these, since Xylem buys a larger proportion of their services. This could for instance mean that some specific TPLs are responsible for more services or for larger areas of distribution. This would give these specific TPLs more incentives to adapt their operations and information flow to Xylem.

Another way of creating incentives for the TPLs to adapt to Xylem's requirements is to look at the wider network of relationships. For example, if some of the TPLs other customer also would like to make a similar change regarding information flow, this would mean a great opportunity for the TPLs to improve their services toward their customers. With an adaptation that involves joint improvements in several relationships to their customers, an investment in information technology could be more profitable. In this way both Xylem and the TPL would get the benefits of the improvement, which would make the change more likely to occur. In this case, a clear definition of common standards would have to be agreed upon between the companies' communication with the TPLs. If several companies demand different standards, a problem of coordination will arise when trying to instate a standard that fits the needs of all of these companies.

5.3.3 Establishing new conduits of information sharing

The current situation within the business network surrounding Xylem means that information being transferred from a TPL to Xylem's end customer must pass several actors. This puts high demand on the information flow between the involved actors.

The throughput time of the information from Xylem to end customer, or vice versa, takes longer time than if Xylem and the end customer had communicated directly. This has an effect on the quality of information, which might be reduced due to this increase in time. To be able to instate a situation where Xylem's end customers can be notified of delays in a more immediate fashion, strict requirements must be placed on the efficiency of the information flow from Xylem to their end customers. The more actors involved, the more complicated the process of transferring information from Xylem to the end customer will become. The efficiency of the information flow from Xylem to end customer will depend on the extent of which each actor in the business relationships take part in the transferring of information. Even if one business relationship has a high level of integration, where the technological distances are low and the information sharing is high, another business relationship that contributes to the information flow may be of lower level of integration, thus causing the total

time for information flow to increase. Therefore, in order for Xylem to be able to work proactively with the handling of transports, it is necessary that the information flow from the TPL all the way to the end customer is handled efficiently.

Because of the complexity due to several actors taking part in this information flow, a solution that would minimize the total time it takes for information to flow from the TPL to the end customer, as well as reduce the risk of the content of the information being altered, is to establish a new link of information sharing between the sales company and the TPL handling the transports. Since the exchange of information with the end customer is handled with the sales company, all information has to be routed through the sales company. In this way, Xylem can actually be seen as the intermediary, forwarding information between the TPL and the sales company. Thus, by establishing information sharing between the TPL and the sales company the information flow from TPL to end customer could be improved. This connection is stated by Xylem to already exist in some cases, but according to the empirical data in this thesis, none of the interviewed TPLs actively share information with the sales companies.

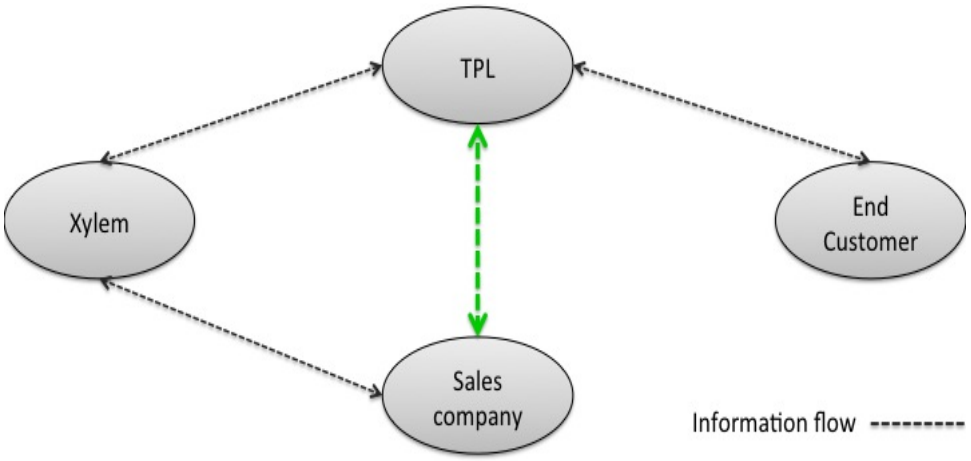


Figure 5.4 The information flow with an additional arrow symbolizes a proposed solution for Xylem

If the sales companies would be able to access delivery information on its own, they would be able to more efficiently provide this information to the end customer, which would result in a higher physical distribution service. Today, when the sales company receives complaints from the customer, they mostly have no information regarding the location of the shipment. Therefore, the sales company needs to get in contact with Xylem before they are able to inform the customers about the delivery. Not being able to inform the customers at first contact contributes to a lower overall experienced satisfaction by the customer and is therefore damaging for the company.

However, it is possible that direct information sharing between the sales companies and the TPLs is complicated to establish. It could be that the reason for the TPLs not communicating with the sales companies is that such a situation is undesirable for the TPLs. The empirical data states that the TPLs prefer to handle the majority of the information exchange with the company that is seen as their customer, which is in this case Xylem and not the sales company. Therefore, establishing information sharing between these two actors may prove difficult. The possibilities of implementing a change of this sort is decided by the same conditions as those relating to the implementation of standardized information sharing processes. Firstly, if the relationship between Xylem and a TPL is of a higher degree of integration, then there will be more incentives for the TPL to satisfy Xylem's demands, which could be in the form of establishing information sharing with the sales companies. Furthermore, such a new information sharing would be easier to bring about using standardized information sharing processes. If such standards were in use, it would be easier for the TPL and the sales company to share information, provided they use the same standard.

By increasing this connection between the TPL and the sales company, the integration within this relationship increases, changing the relationship from what could have been seen as being transactional to more of a facilitative relationship. This closeness in the relationship will contribute to a reduction of misinterpretations of the information, since the parties involved share information closely and directly, instead of sending the information or questions through Xylem. However, this increased integration between the TPL and the sales company could possibly result in a decreased level of integration between Xylem and the TPL. If all information regarding transports is routed through the sales companies and never reaches Xylem, the level of integration between Xylem and the TPL might decrease. On the other hand, this is unlikely to occur, since Xylem wants to be able to monitor its transports, and a severing of this relationship completely would not make this possible. Furthermore, the TPLs prefer to communicate with the company that places the order for the shipments; thus this connection is unlikely to ever cease to exist completely. The increased level of integration should instead be seen as an expansion of the existing relationship, rather than a replacement for the current relationship between Xylem and the TPL.

An important aspect to highlight is the fact that even if the information flow to the sales companies is improved, it is up to the individual sales company whether they convey the information to the end customer or not. This could result in that the information flow to the end customer could still lack in quality.

5.3.4 Closing discussion

Improved information flow is essential in bringing about an improved physical distribution service. Lacking information flow can be derived from the distances that exist between the company and the companies acting as intermediaries. How the information flow could be influenced is therefore through the bridging of these distances. Firstly, a company could influence the information flow by clearly specifying the data that it requires. This would lead to a reduced social distance, since the companies would be increasingly aware of the other company's possibilities. Furthermore, implementing standards of information technology, with standardized ways of information sharing with standardized content, can reduce the technological distance.

However, the possibility of influencing the other companies to implement a standardized information sharing system depends on the business relationships with the intermediaries. From the current situation, where the relationship between a company and an intermediary is seen as a facilitative relationship, it could be difficult to create incentives for a TPL to adapt its processes to that of a single company. The possibility of influencing a TPL may be simplified if the business relationship is reevaluated and seen as a more important business partner. A TPL will then have greater incentives for adapting its processes to a single company. However, regardless of the level of integration between two companies, a single relationship is influenced by other business relationships in the business network. Bringing about such a change on its own may prove difficult for a single company, but if a common standard is developed to encompass several companies, the incentives for the TPLs to adapt their processes will be greater yet again.

Because of the complexity of the network when using intermediaries, the information flow to end customers also becomes complex. In order to improve the information flow from a producing company that uses sales companies to communicate with end customers, is to establish new routes of information sharing that reduces the total numbers of actors partaking in the sharing of information.

It is important to highlight the fact that this thesis is based on the statement that improved information flow ultimately leads to improved physical distribution service. However, this may not always be the case: such a change may not directly result in increased customer satisfaction, if the real cause for dissatisfied customer is something different than just informational problems. In fact, through the interviews performed, it can be concluded that one important area of concern for some of Xylem's customers is the fact that deliveries the deliveries have long lead times; it takes a long time for

products to arrive to the end customer. These complaints differ depending on different parts of the world, and may be more relevant when analyzing customers in markets that are far away from a distribution center. These complaints are still valid aspects to highlight, since it means that not all customers may be increasingly satisfied solely by more efficient information sharing regarding delivery deviations. An alternate proposal of how the physical distribution service could be improved is therefore to ensure shorter lead times for the deliveries of products. This could be achieved through sales companies keeping a larger stock of more products, so that the products could be sent directly to the end customer from the sales company, instead of having to send them from a distribution center in another part of the world. However, the implementation of such a strategy, in which the sales companies tie up capital in the form of increased stock, is outside the scope of this thesis. Increasing the stock with the sales companies will be costly, but might also result in satisfied customers, that remain loyal and do not switch supplier. On the other hand, it could be said that an improved information flow does contribute to a better physical distribution service in this case as well, as an improved information flow would lead to a greater insight into, and an overview of, the current situation and any potential problems. This way, problems concerning lead times can be shared more effectively, and countermeasures can be deployed in order to solve the problems.

5.4 Research question 4

"How can a company's pursuit toward a sustainable business practice be supported through joint efforts in a business relationship?"

The following discussion will analyze how the possibilities for the work toward sustainability can be supported through a business relationship by using the case study of Xylem. In able to identify possible joint efforts that can be made in a relationship toward sustainability, the current situation of Xylem will first be analyzed. After that, the business relationships will be examined in relation to sustainability.

5.4.1 Current situation

In the case of Xylem Water Solutions, the close relationship to water leads to the issue of sustainability being closely associated with their business: controlling the flow of water and being able to provide clean drinking water are necessities for any working society. The challenge lies in providing such services, while minimizing the impact on the environment. Government regulations and laws also have an effect on the company, but Xylem Water Solution has various internal demands that they strive to fulfill. In line with this, Xylem Water Solutions has acquired a range of certifications that touch upon the subject of sustainability, such as ISO 9001, ISO 14001 and Q3. Xylem Water Solution's goal is to become environmentally neutral in their operations, which has made them look over their processes to find areas of improvement.

Because of Xylem's profile, the company assuredly receives some benefits from working with these issues regarding sustainability. The increased effectiveness of its processes, for example through the recycling of waste energy, has probably brought with it a reduction of cost. Furthermore, because of the focus on the aspects of sustainability, the company should also be able to realize an increase in the value of its products; increased sustainability can be seen as a level of service, which follows the reasoning in the rest of this thesis. This results in the customer becoming more dedicated to the company brand, effectively increasing the customer retention.

However, Xylem has focused most of the effort of improving the sustainability of their operations on their internal processes, which comes as a natural effect of the greater control the company has in this respect. But the demands on sustainability, both from the company itself but also from its customers, do not stop at their own processes. Today, it is even more important to consider the sustainability of other connected companies, since surrounding services and operations should be seen as a part of the product itself. The natural extension of Xylem's sustainable policies should therefore be to include their partner companies in this process. Xylem has to some extent participated in projects with their

TPLs, aiming for improvements in sustainability issues. For instance, the sourcing project that was conducted with TPL 3, where the decision of where to place the production site was evaluated on the basis of the sustainable impact, although the frequency of these types of projects should be intensified.

The TPLs are an important part of Xylem's total sustainability profile, because of the impact that transports have on the environment. The interviewed TPLs however, do not consider environmental sustainability to be such an important issue in itself; instead consider it to be of interest only if the sustainable solutions involve economic benefits. However, it seems that the interest from TPLs toward sustainability has increased in recent times, which is something that comes as an effect of increased number of requests from their customers. However, even though the market demand from the customers on sustainability has increased in recent times, it is still not a primary priority for most of the TPLs' customers. Some of the TPLs state that they could do more in terms of sustainability, but that there are not high enough demands from their customers. This can be interpreted as the customers not seeing the TPLs' work with sustainability as part of their own sustainable profile. This correlates with the previous declaration that the relationships between TPLs and customers like Xylem are of more of a facilitative nature. Cooperation, on the other hand, requires a relative high level of information sharing, which indicates a rather integrative cooperation; an example of such collaboration is that between Xylem and TPL 3. Ideas and possibilities of cooperation within the relationship between Xylem and TPLs obviously exist, since projects between these actors have taken place. However, these are more like single isolated episodes and do not point toward a continuous, long lasting cooperation regarding sustainability. Furthermore, the majority of the TPLs state that they do not experience significant pressure from Xylem or other companies regarding sustainability. It seems that Xylem does not see that the actions of the TPLs affect Xylem's sustainable profile.

Regarding the sales companies, they do not have the same capabilities to affect the environmental sustainability in the same way as the TPLs or the production sites within Xylem Water Solutions. This is because their operations do not involve manufacturing, physical logistics or any other activity with a high sustainable impact. However, the sales companies have the responsibility of communicating the sustainable profile of Xylem, through their contacts with the end customers. All of the sales companies interviewed seem to define sustainability in different ways, which most often do not correlate with Xylem's sustainable profile that should be communicated to the end customers. This implies a social distance between Xylem and the sales companies, where the counterparts do not have insight in each other's perception and commitment regarding sustainability. Going further into the sustainable work of the sales companies, it is important to recall that these companies sometimes in turn have other TPLs which perform transports to end customers; these relationships have similar possibilities for improvement as those between Xylem and its TPLs. Because of the different view on sustainability between these sales companies and Xylem, it could be that the sales companies do not utilize their relationship with these TPLs in the same extent as Xylem; this is something that might affect the overall sustainable profile of Xylem Water Solutions.

5.4.2 Possibilities to influence in business relationships

As TPLs are tied to many laws and regulations that handle the environmental aspects of their business and often certified according to ISO 14001, this should make Xylem's work easy in terms of choosing actors that work in a sustainable fashion, simply by choosing companies that follow the law and fulfill the requirements for the certification. In reality, however, it is perilous to put too much emphasis on these factors, especially on certifications, because of the limitations that may come inherent with these. As a complement to these certifications, a list of custom requirements regarding the TPLs sustainable work should be used. By using fulfillment of a set of custom requirements as criteria in the purchasing process, Xylem has a better platform from which to develop the sustainable workings within the business relationship.

The work with sustainability in the business relationships between the TPLs and Xylem will also warrant Xylem to audit the performance of these actors. According to the interviewed TPLs, auditing is something that is still quite uncommon in the transportation industry. The TPLs' customers seldom have any extensive demands, instead trusting the TPLs' work in sustainability to be sufficient. Auditing will, however, provide Xylem with data that could otherwise not be attained, which in turn may point toward possible improvements in the processes; such possibilities for improvement may arise on either Xylem's or the TPLs' side. Auditing is something that might require quite substantial resources, due to the sheer scale of operations. Therefore, Xylem should use a smart way of auditing, where they bring forth parts of the TPL that might be problematic. This might also come as an effect of the closer collaboration between these actors, as discussed in the previous research questions.

In a business relationship, the possibilities to work toward sustainability are often defined in the purchasing agreements, where company-specific requirements, which might include sustainability requests, can be stated along with the demand for certain certifications. Certification requirements are often used because of the relatively low amount of effort that an ordering company needs to put in. The certifications are supervised by another unbiased certification agency, which makes supervising a minor problem, although companies should still perform their own audits. The problem with the certification approach, though, is that it puts a lot of emphasis on the certification itself. There might be inherent problems, such as some necessary parts that are looked over in the specification of the certification. There are also high costs related to the enforcement of such certifications. It is therefore important to look for other means to work toward sustainability within the business relationship.

By developing, and to some extent enforcing, a proprietary set of requirements, Xylem can influence the connected TPLs to work toward sustainability in a wider sense. Because of the already harsh requirements that are put on the actors in the transportation industry, one might consider this as superfluous. But, as the literature study has shown, there might be positive effect of combining requirements and regulations from different actors. This comes from the differing capabilities of these actors, where one might have a comparative advantage over the other in some aspects. Government regulations will affect companies differently than private regulations or demands. In this study, the regulations that stem from the government often deal with the technical aspects of the transports, such as emission levels and technical attributes of the equipment used for transportation. There might be a situation where the requirements are more suitable for Xylem to put forth, than by the government, because of a comparative advantage. This could, for example, be to institute demands on certain technical aspects of the delivery vessels specific to Xylem, which would increase the effectiveness of the transports and reduce the environmental impact.

In the case of TPLs, there is also a clear connection between the work toward sustainability and cutting costs; by improving the transports' efficiency, there are gains both economically and environmentally. Common goals encompass better organization of transports, such as higher fill ratios and optimized routing, and better fuel efficiency; aspects that provide benefits in both economic and environmental terms. A closer collaboration in terms of sustainability between the actors might therefore not only affect the sustainability of the business relationship in terms of social and environmental sustainability, but can also affect the economic sustainability. This gives further incentives for both counterparts to work toward environmental sustainability.

To be able to have a comprehensive view and work with sustainability within Xylem Water Solutions and be able to influence other connected companies, it is of importance for Xylem Water Solutions to establish and communicate a common view regarding sustainability to these connected companies. The present social distance regarding sustainability could be reduced by better information sharing between the companies, such as through the yearly Group meetings with the sales companies in the USA.

5.4.3 Closing discussion

Sustainability is not something that ends at the company's borders. The work toward sustainability, especially for companies with a profile in this area, must also include its connected actors. Today, the demands on companies from customers often cascade throughout the network of connected actors, even to the point where the original company has very little control over the actual operations. This comes from the fact that each company involved in bringing the product to end customer has effect on the total sustainability of this product. As sustainability can be seen as a part of the customer service, this also affects the value of the final offer. In order to improve the total sustainable impact of a business, it is therefore important to include the connected actors and work with sustainability in the business relationships. It is however of importance that all involved parties have the same vision and perceptions regarding the work with sustainability. This could, for example, be maintained by having periodical meetings, where these issues are discussed, and through good information sharing between the companies.

Private regulation and demand is different from company to company; by the combination of regulation and auditing from different sources, there might be an overall positive effect. These different regulations and pressures might not necessarily be coordinated in order to work well, as the different characteristics of companies make them concentrate on the parts where they are the most effective; something which comes from comparative advantages. However, the possibility a company has to influence the TPLs depends on the business relationship and the extent of cooperation between them.

The inclusion of different companies in a unified attempt to improve in terms of sustainability has been shown to produce more effective solutions, as generally, the availability of information and the collective experience is more extensive. Such collaboration between companies are also often better in terms of return on investment: when multiple companies work toward the same goals, the shared resources, both in terms of finance and experience, provide a good platform from which projects with a larger scope may be launched. The cooperation in the work toward sustainability also has an effect on the level of interdependence between companies.

6 Conclusions

This chapter aims to answer the research questions, and to provide an answer to the purpose of this thesis.

Research Question 1: How can a business relationship between two companies be described, where one of the companies acts as an intermediary between the other company and an end customer?

How to describe a business relationship between a company and a company acting as an intermediary differs depending on the role of this intermediary. The relationship with a sales company is defined as being integrative in nature, because of the high dependency between the companies. However, this level of dependency can be thought to be a result specific for this case study, as the sales companies operate within the same Group as the producing company in focus. The more interesting relationship is that with a TPL, which can be thought to be relevant in a more general context. The empirical data in this study indicates that this business relationship is of facilitative in nature, meaning mutual adaptations and changes can only be performed to a certain degree. Empirical evidence further strengthens this definition, as the TPLs convey a difficulty in adapting to a specific customer; only two out of five interviewed TPLs have to a greater extent adapted processes to fit the needs of the company in focus.

TPLs are companies, judging by the evidence hereby presented, whose services are viewed as indirectly necessary, but the TPLs themselves are not viewed as companies with whom close relationships are established. However, an analysis based in the wider network concludes that the TPL has a strong direct importance for the producing company, since a failure to deliver its products will result in dissatisfied end customers. The role of the TPL as a business partner does therefore not currently correspond to its actual importance.

The relationship with an intermediary can be described to contain significant technological and social distances. Identified unsatisfactory information sharing indicates a technological distance, and the lack of knowledge concerning the intermediary's services and possibilities indicates a social distance.

Research Question 2: How can the aspects of information flow be described within a business relationship between two companies, where one of them acts as an intermediary?

The technological and social distances correlate with lacking information sharing and information quality within the business relationships with an intermediary. Information is shared frequently and contains detailed information. However, problems with disparate information flow are identified, where companies convey information using different standards. Furthermore, the information that is shared differs in content, depending on the company sending the information. This leads to an unnecessary situation in which much effort is put into coordinating differing information in different formats. The information quality further varies, in the sense that the information does not always fit the needs of the company that receives the information. Foremost, the information lacks in quality in terms of the aspects, content and recency; the information can be said to be too extensive to be useful, and it would be beneficial to receive the information about occurred deviations faster.

An improved information flow would improve the physical distribution service, as an improved information sharing and information quality would lead to an increased overview of the transports. This increased knowledge of the distribution process would make possible a more efficient identification of possible problems. This would enable the company to work proactively with its transports, in the sense that end customers can be notified of delays before the end customers themselves complain about the deliveries.

Research Question 3: How can a company improve the information flow in relation to connected companies which act as intermediaries?

Three concrete ways in which the information flow can be improved have been proposed. Firstly, by specifying required information, a company can convey what it expects from an intermediary, and realize what is possible and what is not. This would mean a bridging of the social distance between the two companies. Secondly, by implementing standardized ways of sharing information, with standardized content, the technological distance between the companies will be reduced. Thirdly, the complexity of the information flow in the business network could be improved by establishing new information sharing conduits, which reduces the total number of actors partaking in the sharing of information. This way, information could reach the end customer faster than today.

The possibility for a single company to bring about these changes depends on the other relationships within the business network; the TPLs have other customers, and the sales companies have other suppliers. Because of the relationship with a TPL being of facilitative in nature, it is concluded that it would be difficult for a single company to influence a TPL to adapt to solely that single company. The conclusion is that in order for a company to be able to create more incentives for the TPL to adapt to the company, a reevaluation of the current business relationship with the TPL is needed. If the business relationship with a TPL is seen as more important, where the relationship approaches that of an integrative relationship, the possibilities for a TPL to meet the demands of a single company is greater.

As noted, the business relationship between a company and a TPL is an issue of importance and interest. However, not much research exists within this field of study. To better realize what such a reevaluation of the business relationship would result in, further research in this field is needed.

Research Question 4: How can a company's pursuit toward a sustainable business practice be supported through joint efforts in a business relationship?

Maintaining a strong connection between a company's brand and sustainability is something that cannot be done by a single company in isolation. Interaction and collaboration between companies is essential, as the requirements of sustainability do not stop at the borders of the company in question. In relation to the TPL, it can be seen that government regulations already has what is required to maintain the sustainability of this business. There are, however, benefits of concurrent private regulations, because of the comparative advantages that each actor has in different areas. It can thus be concluded that the joint collaborations regarding sustainability with a TPL can be improved compared to the situation of today, which would result in a strengthening of sustainability within the business relationship.

Furthermore, the sustainability can be strengthened in the business relationship through collaborative efforts and projects. Collaborative efforts, such as meetings within the Group, could minimize the social distance within the Group, and therefore provide a more homogenous approach to sustainability.

7 Reference list

Academic papers

Amengual, M. (2009).Complementary Labor Regulation - The Uncoordinated Combination of State and Private Regulators in the Dominican Republic. *World Development.*

Bagchi, P K. (1992).International Logistics Information Systems. *International Journal of Physical Distribution & Logistics Management.*

Baker, G. (2009).Why Sustainability still makes business sense. *NZ Business.*

Bienstock, CC., Mentzer, J T., & Bird, Monroe Murphy. (1997). Measuring Physical Distribution Service Quality. *Academy of Marketing Science.*

Blackenburg Holm D., Eriksson K., & Johanson J. (1999). Creating Value Through Mutal Commitment to Business Network Relationships. *Strategic Management Journal.*

Bourne, C P. (1963). Methods of Information Handling. *California: Stanford Research Institute.*

Bradbury-Huang, H. (2010). Sustainability by collaboration: The SEER case. *Organizational Dynamics.*

Bryman, A., & Bell, E. (2003). Business Research Methods. New York.

CA Magazine. (2011).The Whys behind sustainability. *CAmagazine.*

Cachia, M., & Millward, L. (2011).The telephone medium and semi-structured interviews: a complementary fit. *Qualitative Research in Organizations and Management: An International Journal.*

Caldeira Pedroso, M., & Nakano, D. (2009).Knowledge and information flows in supply chains: A study on pharmaceutical companies. *International Journal Production Economics.*

Cannon, J P., & Perreault Jr, W D. (1999). Buyer-Seller Relationships in Business Markets. *Journal of Marketing Research.*

Detlor, B. (2010). Information management. *International Journal of Information Management.*

DeHayes, D W. (2007).Explaining Rail On-time Delivery Performance. *International Journal of Physical Distribution & Logistics Management.*

DiCicco-Bloom, B., & Crabtree, B F. (2006). The qualitative research interview. *Medical Education.*

Duane, D L., & Morris, M H. (1992).Measuring and Managing Customer Service in Industrial Firms. *Industrial Marketing Management.*

Eckert, C., Clarkson, J., & Stacey, M. (2001). Information flow in engineering companies: problems and their causes. *Glasgow: International Conference on Engineering Design.*

Emerson, C J., & Grimm, C M. (1996).Logistics and marketing components of customer service; an empirical test of the Mentzer, Gomes and Krapfel model. *International Journal of Physical Distribution & Logistics Management.*

Ewing, T., & Feldman, R. (2012).The Giants Among Us. 2012 STAN. TECH. L. REV. 1 http://stlr.stanford.edu/pdf/feldman-giants-among-us.pdf.

Frederick E., & Webster Jr. (1992).The Changing Role of Marketing in the Corporation. *Journal of Marketing.*

Griffit, D A. (2002). The role of communication competencies in international business relationship development. *Journal of World Business.*

Hadjikhani, A., & Thilenius, P. (2009). Industrial relationships and the effects of different types of connections. *Industrial Marketing Management.*

Heskett, J L. (1994). Controlling Customer Logistics Service. *International Journal of Physical Distribution & Logistics Management.*

Håkansson, H., & Ford, D. (2002). How should companies interact in business networks? *Journal of Business Research.*

Håkansson, H., & Snehota I. (1995). Developing Relationships in Business Networks. *Uppsala: University of Uppsala*

Lefebvre, É., Lefebvre L A., & Talbot, S. (2003). Determinants and impacts of environmental performance in SMEs. *R&D Management.*

Leuschner, R., Charvet, F., & Rogers, D S. (2013). A Meta-analysis of Logistics Customer Service. *Journal of Supply Chain Management.*

Li, S., Lin, B. (2006).Accessing information sharing and information quality in supply chain management. *Decision Support Systems.*

Lippman, S. (2001). Supply Chain Environmental Management. *Environmental Quality Management.*

Jonsson, P., & Forslund, H. (2010). Integrating the performance management process of on-time delivery with suppliers. *International Journal of Logistics Research and Applications: A Leading Journal of Supply Chain Management.*

Kemppainen, K., & Vepsäläinen, A P.J. (2003). Trends in industrial supply chains and networks. *International Journal of Physical Distribution & Logistics Management.*

Koon Huat Low, B. (1997). Managing Business Relationships and Positions in Industrial Networks. *Industrial Marketing Management.*

Mu, J., Peng, G., & Love, E. (2008). Interfirm networks, social capital, and knowledge flow. *Journal of Knowledge Management.*

Nawrocka, D. (2007). Inter-Organizational Use of EMSs in Supply Chain Management: Some Experiences from Poland and Sweden. *Corporate Social Responsibility and Environmental Management.*

Neumann, S. & Segev, E. (1979). A Case Study of User Evaluation of Information Characteristics for Systems Improvement. *Information and Management.*

Oswald, P. (2010).Will sustainability kill profitability? *Corporate Report Wisconsin*

O'Toole, T., & Donaldson, B. (2000). Managing buyer-supplier relationship archetypes. *Irish Marketing Review.*

Savenye, W C., & Robinson, R S. (2005). Using Qualitative Research Methods In Higher Education. *Journal of Computing in Higher Education.*

Schurr, P H. (2007). Buyer-Seller Relationship Development Episodes: Theories and Methods. *Journal of Business and Industrial Marketing.*

Turban, Efraim. (2002). Electronic commerce; a managerial perspective. *SciTech Book News.*

Vanpoucke E., Boyer, & K K., Vereecke A. (2009). Supply chain flow information strategies: an empirical taxonomy. *International Journal of Operations & Production Management.*

Book references

Cook, S. (2008). *Customer Care Excellence – How to Create an Effective Customer Focus*. London: Kogan Page.

Coyle, J J., Langley J C., Bardi E J. (2003). The Management of Business Logistics: A Supply Chain Perspective. Cincinnati, Ohio : South-Western/Thomson Learning.

Ford, D., Gadde, L.-E., Håkansson, H., Lundgren, A., Snehota, I., Turnbull, P. & Wilson D. (2000). *Managing Business Relationships.* Chichester: John Whiley and Sons Ltd.

Gillham, B. (2010). Case Study Research Methods. London: Continuum International Publishing.

Håkansson, H., Ford D, Gadde, L.-E., Snehota, I. & Waluszewski, A (2009). *Business in Networks.* The Atrium: John Wiley & Sons Ltd.

Muijs, D. (2004). *Doing Quantitative Research in Education with SPSS*. London, GBR: SAGE Publications Inc.

Slack, N., Chambers, S., Johnston, R. (2010). *Operations Management.* Harlow, GRB: the Pitman Publishing.

Woodside, A. (2010). *Case Study Research: Theory, Methods and Practice*. Bradford, GRB: Emerald Group Publishing Ltd.

Internet references

Naturvårdsverket. *Återvinning av värme – lyft för energiintensiv industri.* Retrieved April 1, 2013 from: http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-8623-7.pdf

Appendices

Appendix I – List of Figures

The figures included in the thesis are listed below, all drawn by the authors.

Appendix II – Interview templates

In this appendix the interview templates are presented. The questions on the templates have been the basis to the interviews performed with Xylem, the TPLs and the sales companies.

Interviews with Xylem

Organization

1. Which TPLs do you consider to be the best?
    a. Why?
2. How does this TPL differ from the others?
3. Do you have a relationship with a TPL you consider to be the best?
    a. Why?
4. How would you describe this relationship?
5. Have you adapted your deliveries to any TPL?
    a. Why? Why not?
6. Does it seem to be hard for the TPLs to adapt their business to yours?
7. Have you considered why/why not?
8. Do you have any special person to contact at the different TPLs?
9. Do you have any routines for delayed shipments?
10. Who is responsible for the goods while shipping?
11. Who is responsible for the goods to arrive in time at the destination?
12. Why do the customers call Xylem when shipments are running late?
13. How do you define customer service?
14. How do you define delivery service?
15. What factors do you think can affect the delivery service?
16. When you make changes within your organization: Do you take possible changes within other companies into account?
17. How do you think the information flow work between you and the sales companies? (Email, meetings, integrated system…)
    a. The TPLs?

Sustainability

1. Is the work place customized?
2. The people working in production, are they protected and do they use protective clothing?
3. Are there a lot of laws and rules on sustainability?
4. Do they differ between countries?
5. What happens when rules and laws are not followed?
   Do you have great influence on suppliers?
6. Are the products recyclable?
7. Do you measure emissions from production?
8. Do you work actively with the TPLs and their sustainability work?
9. Do you require the TPLs to work with sustainability?
10. Does money control decisions?
11. What are your future environmental and sustainable goals?
12. Do you have some goalposts?
13. Would you describe Xylem as good on sustainability issues?

Interviews with TPLs

General Question

1. Can you describe your company's business?
2. What transportation means do you work with?
    a. Why these?
3. Which regions are you present in?
    a. Why these regions?
4. Are you present on many continents?
5. What role does your company play on the market, regarding size, presence and cooperation with other actors?
6. How do you define distribution service?
7. What additional services do you offer your customers?
8. What delivery precision do you perform?
9. How do you measure delivery precision?
10. How do you work in order to improve the delivery precision?
11. What do you require from your customers to be able to improve yourself?
12. Does your way of measuring delivery precision differ in any way from your competitor's way of measuring?

Relationship to customers

1. Could you describe your customers regarding how many customers you have, how big they are, which industries they are in, and where they are located.
2. What kind of relationship do you have to your customers?
    a. Long-term relationships or short-term relationships?
    b. Do the relationships differ between different customers?
    c. Why have you chosen to have long-term or short-term relationships?
    d. Could you exemplify in what way your relationships are long-term or short-term?
3. How do you cooperate with your customers?
4. Do you cooperate in order to prevent any problems with the deliveries?
5. Do you adjust your services depending on your customers requests or do you have standardized procedures?
6. Do you have any customer where the cooperation is working particularly well?
7. What is your connection to Xylem?
8. For how long have you worked with them?
9. Do you have a close relationship?
10. What sort of transports do you perform for them?
11. How often do you handle transports for them?
12. Are you pleased with your relationship with Xylem?
13. To what extent do you adjust your operations depending on Xylems requests?
14. Describe of how big importance your company is to Xylem, according to you.
15. Describe of how big importance Xylem is to your company.

Information and communication

1. How important is it to have good communication with your customers? Why?
2. What information is communicated between you and your customers?
3. How is the information communicated?
4. Are there one or several communication channels?
5. Does every customer have their own interface or do you work with standardized ways of communication?
6. How often do you communicate with your customers?
    a. Regularly?
    b. Sporadically?
7. What data do you compile from your deliveries?

8. Why these data?
9. How do you decide what data that will be compiled for each delivery?
10. Do you do this in cooperation with your customers? With Xylem?
11. Is there any industry standard for how data from deliveries should be reported?
12. Do you consider it important to report data from deliveries?
13. What happens if transports are delayed?
14. How do you work to prevent delays?
15. Do you have any responsibilities towards the receiver?
16. In the case of delays, do you compensate your customers? How?
17. How do you communicate information regarding your deliveries?
18. How do you use the data that you compiled from the deliveries?
19. How do you send the data to your customers?
20. Is there anyone else who also takes part of the data? Intermediaries? Sales companies?
21. Do you notify to you customers routinely if there are any deviations in the deliveries?
22. Do you notify the deviations/delays to the receivers as well?
23. What information do your customers expect to receive regarding your deliveries?
24. Are you able to meet these requests?
    a. Do these requests differ between different industries/regions?
    b. Do these requests differ between different customers?
25. How do you communicate with Xylem?
26. Are you pleased with this contact?
27. How often do you communicate with them?
28. How do you report information about your transports to Xylem?
29. Is it the same way as to other customers?
30. How satisfied/dissatisfied do you believe Xylem is with the information you provide them?
31. What requests does Xylem have regarding this information?
32. To what extent are you able to meet Xylems requests?

SUSTAINABILITY

1. How does your company define sustainability? Environmental sustainability?
2. How do you work with sustainability today?
3. How does your way of working with sustainability affect your competitive strength?
4. Do your customers affect your way of working with sustainability in some way?
    a. How?
5. Is there any customer in particular with extra demands regarding sustainability?
6. In what way does Xylem affect your work with sustainability?
7. Is your company certified? ISO 14001? ISO 9000?

Interviews with Sales Companies

Overall

1. Could you describe your business?
2. Do you work exclusively as an intermediary for the production site in Emmaboda, Sweden?
3. What region(s) are you responsible for? Where are your customers located?
4. How do you provide service for customers?
5. Do you store products on their way to end customer?
6. Do you provide support and maintenance for products?
7. Do you cooperate with any other actors on the market? In that case, why and how do you cooperate with them?

Customers

1. Could you briefly describe your customers? Which different industries/markets do your customers operate in?
2. What type of relationship defines your customer relationships? (Long-term or short-term relationships?)

Complaints regarding delayed deliveries

1. Do you experience that some customers are disappointed with the service regarding deliveries of their products? If so, in what way are customers disappointed?
2. How do customers communicate their complaints to you?
3. What are the demands, regarding delivery service, from your customers?
4. What is important for them?
5. Is it when products arrive, or merely those they receive information about delayed deliveries, or is the quality of the products of greatest interest?
6. How are complaints from customers forwarded to the production site in Emmaboda, Sweden?
    a. To other production sites?
7. How would you say that these complaints regarding deliveries could be solved?
8. Are there any customers that, on multiple occasions, have complained about regarding deliveries? Is it possible for us to get in touch with such customers?

Information and communication

1. What type of information do you exchange with customers?
    a. With TPLs?
2. With the production site in Emmaboda, Sweden?
3. How does the means of handling communication differ between different actors (different customers, TPLs etc.)? (E-mail, telephone, fax, database, EDI?)
4. Do you use an EDI method for communicating with customers as well?
5. Do you use and evaluate received data to increase customer satisfaction?
6. Are you satisfied with the information you receive from customers?
7. How do you handle the communication with the site in Emmaboda, Sweden?
8. Are you often contacted from the production site in Emmaboda regarding orders?
9. Do your customers ever communicate directly with the production site in Emmaboda, Sweden?

Sustainability

1. How would you define the term “sustainability”?
2. How would you say that you work towards sustainable development?
3. How can you affect other actors in your business network to work more actively with sustainable development?

4. How can other actors in your business network affect you to work more actively with sustainable development?
5. Are you certified in any way (e.g. ISO14001)?

Appendix III – Performed Interviews

Below, the interviews performed are listed. However, anonymous sources are not cited.

Name	Function	Date	Interview mode
Matilda Wallergård	Shipping Department Manager, Sweden	13-02-14	In person
Linda Martinsson	Project Manager Group Logistics, Sweden	13-02-14	In person
Thomas Nilsson	Manager Group Logistics & S&OP, Sweden	13-01-31	Telephone
Emil Olsson	Project Manager Group Logistics, Sweden	13-02-14	In person
Cathrin Stock	Sustainability Manager, Sweden	13-04-22	Telephone
Paul Whiteside	Inventory & Logistics Manager, England	13-04-11	Telephone
Filippo Cianci	Materials Management, Canada	13-03-22	E-mail
Axel Bitzer	Logistic Manager, Australia	13-04-17	Telephone
Nancy J Pierce	Logistics & Inventory Planning Manager, USA	13-04-19	Telephone
Shaun Schutte	Procurement & Logistics Manager, South Africa	13-04-15	Telephone

Appendix IV – Additional Case Study Material

Below, additional information to the case study will be summarized. To begin with, a description of both the information and the physical flows will be described.

Description

PHYSICAL FLOW OF PRODUCTS

This summary of the gathered empirical data will provide an explanation of how the different actors that have been interviewed interact. Furthermore, a clear comparison between the TPLs is included, in order to provide a clearer picture of the current situation.

The products can travel in several different ways from Xylem to end customer, i.e. the physical flow of products is different depending on the situation. How the physical flow is designed depends on several factors, such as where the end customer is located, what type of product that is being transported and the criticality of the transports.

Four main ways of distributing the products to the end customer have been isolated. In all cases a third-party logistics provider handles the transports.

1.

Figure A.1 Xylem shipping their goods directly to end customer

2.

Figure A.2 Xylem shipping their goods to sales company, and then to end customer

3.

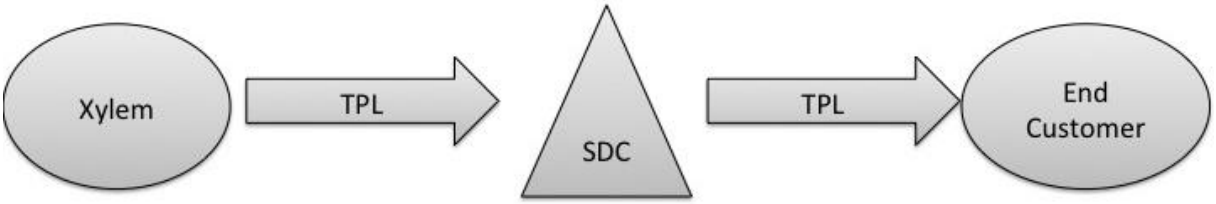


Figure A.3 Xylem shipping their goods to distribution center, and then to end customer

4.

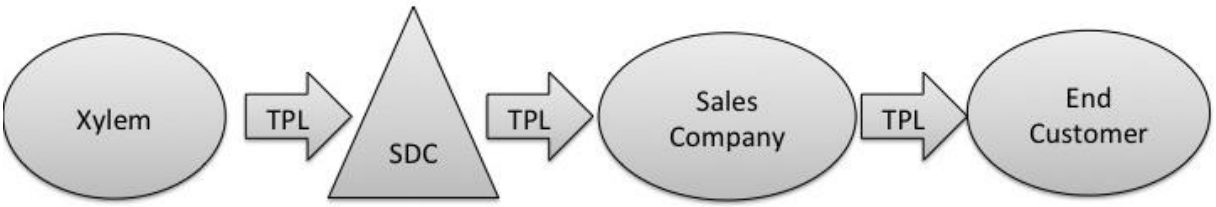


Figure A.4 Xylem shipping to distribution center, then to sales company, and finally to end customer

The TPLs that have been interviewed in this study have all handled the transports directly from Emmaboda, and in some cases all the way to end customer, except for two cases: TPL 3 handles global transports by air and by sea and TPL 5 only handles transports from the distribution center in Metz, France and on to end customer from there. When products are stored at a sales company, usually that sales company is in contact with other TPLs in the specific country, and these other TPLs handle the transports on to end customer.

INFORMATION FLOW

The information flow does not differ in such a degree as of the physical flow. In all of the above cases, information is handled similarly. The end customer only communicates with the sales company, and never directly with the production site in Emmaboda. Xylem in Emmaboda communicates with their sales companies, and the orders from end customers are processed as orders from the sales company and on to Emmaboda. Thus, the sales companies are the customers to the production site in Emmaboda, and Xylem in Emmaboda therefore never communicates directly with the end customers.

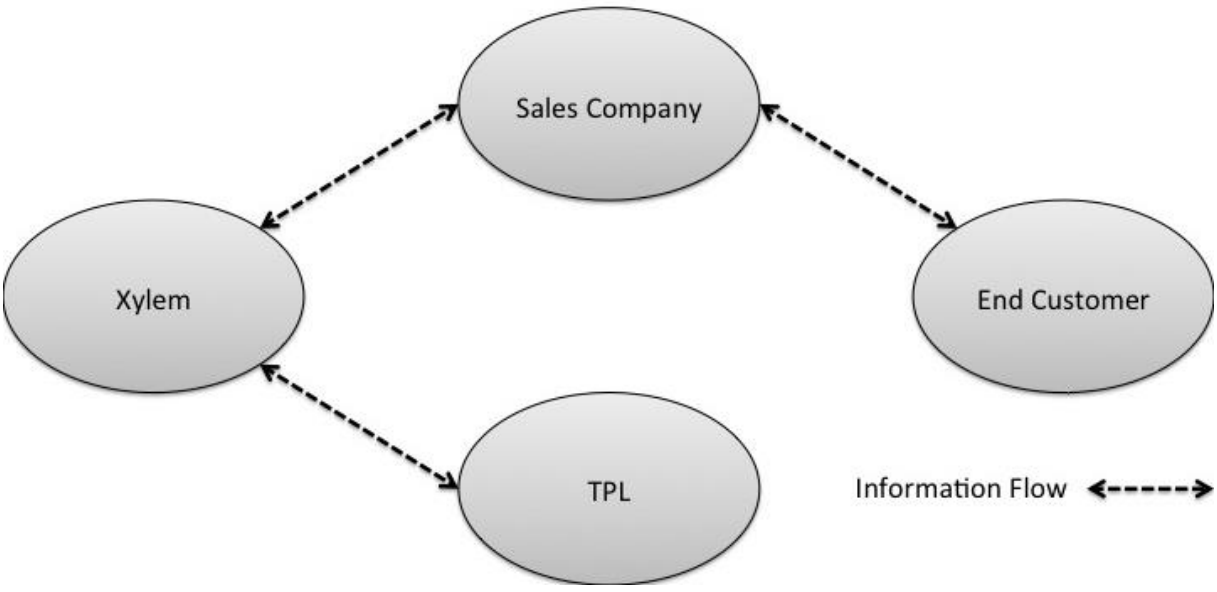


Figure A.5 Xylem exchanges information with both sales company and TPL, while the sales company exchanges information with the end customer

The majority of the TPLs are booked by Xylem in Emmaboda (apart from TPL 5 whose services are booked by the SDC in France). The information regarding deliveries is, in the majority of cases, only communicated from the TPLs to Xylem in Emmaboda. In some cases and to some extent, information regarding transports are also communicated between the TPLs and the sales companies.

JOINT INFORMATION FLOW AND PHYSICAL FLOW

The following picture describes the scenario that is the most interesting situation for this thesis. In the picture both the information flow and the physical flow is included, intending to describe the situation where both of these flows exist simultaneously and how they correlate and where they differ.

The scenario that is most relevant to this thesis is where products are transported directly to end customer; this is also the most common scenario of Xylem's transports. In this scenario, products are transported directly from Emmaboda, via the TPL who handles the transports, to end customer. The communication however, is handled between the sales company and the end customer. The sales company communicates with Xylem in Emmaboda, who in turn communicate with the TPL who handles the transport. In some cases, the TPL and the sales companies communicate directly.

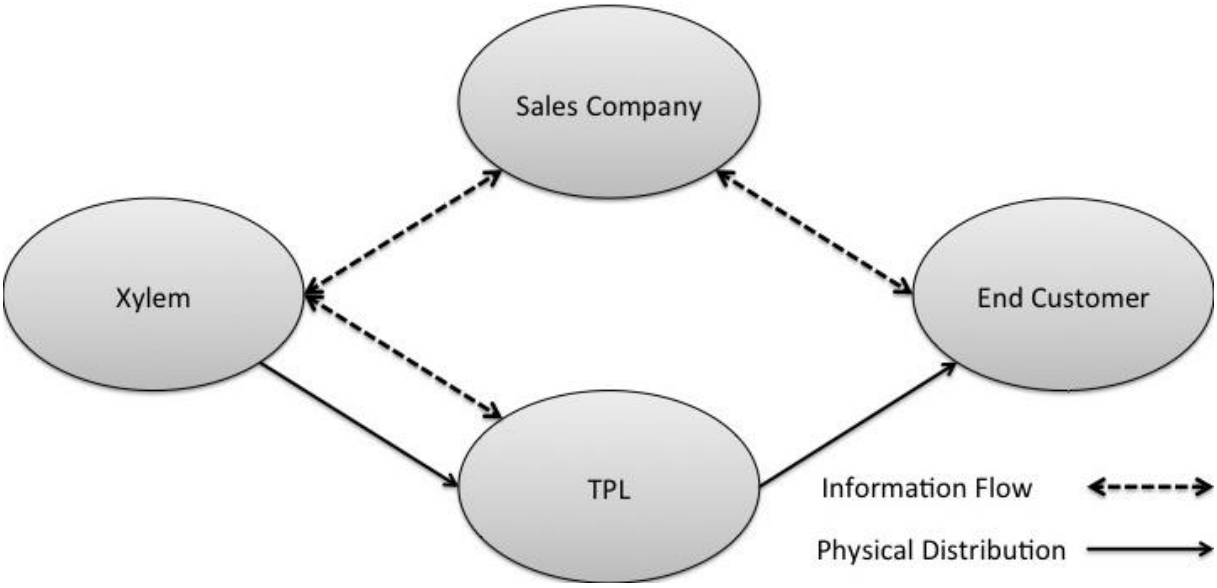


Figure A.6 The dashed arrows represent the exchange of information between Xylem, the TPL, the sales company and the end customer. The solid arrows illustrate the physical distribution flow of product; directly from Xylem to end customer.

The layout of the distribution process, as presented in the picture above, clearly depicts that some actors are in direct contact with Xylem, whereas others are more indirectly in contact with them. Of real interest is the information flow, where Xylem never has direct communication with their end customers. Instead communication is routed through the sales companies. Naturally, this is the case since Xylem water solutions is such a large, multinational corporation, that each production site cannot bear to have communication with end customers. However, this presents a problem for Xylem, since all information to end customers must go through the sales companies, and this demands an effective communication between these two actors.

Additional information regarding Xylem

RESPONSIBILITY

The one party, either Xylem or the TPL that should be responsible for the transports should be stated in a written agreement between the two parties involved in the shipping procurement. If Xylem is the one that books the transport and have the contact with the TPL, they should be the responsible party. This situation is the most familiar to Xylem. This is also why the sales companies call Xylem if a delivery is delayed to the end customers, because Xylem is the responsible party. This situation makes it more comfortable for the sales companies, where they only have to contact Xylem, independently of what might have happened to their orders.

Because Xylem is to be the responsible party of the TPLs' performed tasks, Xylem wants and needs to have close relationships with the TPLs, in order to keep the information exchange continuously and updated. Therefore, the TPLs only act as intermediaries, which enable the sales companies to only have contact with Xylem, and not having to contact different companies depending on where the order is in the process.

WORLDWIDE SHIPPING

To enable worldwide shipping, Xylem has two major warehouses, which are located in Emmaboda, Sweden, and Metz, France. Six major production factories located in Sweden, Argentina, Italy, Germany, the USA, and in China provide these warehouses; the production site in Sweden coincides with the warehouse. In Emmaboda the warehouse has an inside storage area of about 8500 sqm, and a storage areas of 2500 sqm located outside. Most of the shipments are made from the warehouse in Emmaboda; the warehouse is responsible for providing Central- and Eastern Europe, Western Europe, Scandinavia, and the Middle East. Express, sea freight and airfreight deliveries are shipped from the warehouse in Emmaboda as well. Shipments to Western Europe are also made from the warehouse in Metz. Approximately 140-150 thousand pumps are produced and shipped from Xylems warehouses and productions factories yearly, which is about 28 thousand tons of shipped goods every year.

CHANGES WITHIN THE NETWORK

When and if Xylem makes changes in their own organization that can possibly affect other parts in the network, they consider the information very important and work very carefully with getting the information out to the other actors in the network that might be of consideration. Xylem also needs to adapt their own organization and handling to the other actors in order to be able to operate in the network. If, for example, there is a specific day or date of shipments to a specific area or country, and Xylem wants to change it, Xylem will have to check with all of the connected actors in this supply chain that will or might be affected; because is there a boat departing once a week, and the container will miss this boat if the departure from Xylem is moved to another day, then it is impossible for Xylem to make this change.

It is also very important for Xylem to inform, and to be informed by, all of the co-working actors in the network when changing delivery dates or when making other changes, due to for example holidays or possible production stops. Since Xylem is an international company co-operating with, and delivering to companies in other countries with different cultures and ethics, it is essential to inform the other actors in order to enable the network to operate effectively. Because, is there a holiday in Sweden and the goods that were to be shipped these days therefore are not shipped, it might have major impact on the other actors in the specific supply chain or network. It could in a worst scenario affect the other actors so badly that their production or project stands still, which will stand them dearly.

EMPLOYEES AND WORKPLACE

Xylem has implemented a Human Resource System, to give their employees meaningful and job-related information in an efficient way. They have also established an e-collaboration with online courses, blogs, online forums, and surveys, that gives the employees the possibilities to exchange and transfer knowledge and experiences, to learn and help others to learn. A safety program has also been established, with a goal of reaching zero workplace-related injuries.

Xylem works actively with work-related issues, and in Emmaboda the workplace is certified according to both the environmental standard ISO 14001, and the occupational health and safety standard ISO 18001. The ISO 14001 certificate shows that Xylem follows the environmental management and guidelines that the standardization stands for, while the ISO 18001 certificate shows that Xylem lives up to the occupational health and safety management system. In the production facilities there are

some heavy duties, but Xylem works actively with risk analysis in order to decrease and finally eliminate work-related injuries. There is a group called ESH, Environmental Safety Health, daily working with these issues, and there is one ESH-coordinator at every department in the company. This group investigates risks and injuries, and work with a process to increase the safety on the workplace.

People working in the production facilities do have protective equipment, and they are right to do so by law. They both have sturdy shoes, heat resistant clothing, safety helmets, and safety glasses. Xylem does have a work-environment- and safety engineer employed, who works full time with evaluating the safety for the people employed. The engineer evaluates the safety equipment, where he or she determines the usage and the usability of the equipment. If the engineer finds trends of the usage among the workers, if for instance none of them use the safety glasses, there is a very important task for the engineer to evaluate why the safety glasses are not used as they should, and then try to modify the glasses in order to find a better fitting for the workers. Today, there are many of the people working in production that have their own glasses, made out of their own personal requests.

PRODUCTION AND PRODUCTS

At the production site in Emmaboda production emissions are measured, because authorities has decided conditions and limits regarding the amount of emissions. The production is not too environmentally heavy, but very energy consuming due to manufacturing with a high energy-consuming foundry. To recycle the waste heat from their production, Xylem has created a unique system of storing the waste heat, which almost gives the company a climate neutral heating. The unique system is based on waste heat stored in the bedrock, which later on is used to heat their own premises when there is enough of stored waste heat. This solution decreases the need of external energy-suppliers, and therefore reduces the emissions of carbon dioxide. Xylem does also consider their products as widely recyclable. The products consist of different valuable components, such as pure metal, cast iron or copper, which drive the willingness of recycling the products. (Naturvårdsverket)

Third Party Logistics Provider

TPL 1

TPL 1 is a large group, consisting of several underlying, independent firms, which operates worldwide. It is one of the world's biggest TPLs with annual revenues of approximately 56 million euros and has about 500 000 employees. In Sweden the firm has about 5 200 employees. They offer complete solutions to the customers and aim to operate close to the customers. In Sweden, TPL 1 has 26 terminals through which transports are handled, all between Malmö and Umeå.

The firm has customers all over the world and is not specialized in any particular industry or region. They transport all sorts of products except from some that they call "prohibited cargo", which is transportation of living animals etc. They are able to transport all types of freight; large or small loads. Their customers are both companies and private persons, but the segment private a person is very small compared to the business segment.

TPL 1 measures delivery precision as if the transportation between positions A and B is performed on time. The company's goal for delivery precision is 97 %, and that they achieve in the current situation. Some modes of transportation within the firm achieve an even higher delivery precision. They work daily to improve the delivery precision, mostly by analyzing the capacity at the terminals and which shortcomings that arise. TPL 1 finds it very hard to predict the capacity needed at the terminals and they can not forecast the demand, which is a problem. Since overcapacity is very expensive which in the end will affect the customers, they have to improve themselves in order to reduce the costs. If the freight is delayed, it prioritizes to be delivered first of all the next day. As previously mentioned, customers are notified in the case of delays. If the customer is in a hurry the company can arrange a

car to deliver the freight. If the delay is due to the company, the company pays for the arranged car and for the extra shipping costs that may arise.

TPL 2

TPL 2 operates worldwide, but Europe is their biggest market, where the company is the dominant player. Their total market share however, is only 2,7 %, which can be explained by the fact that most transports are handled by local, smaller, contractors. The firm has a total annual revenue of 14, 9 million euros, and about 62 000 employees worldwide. They use all kinds of transportations, and offer complete solutions to the customers, which may also include services such as warehousing. TPL 2 offers what they call "system deliveries", which are delivered with very high volumes of cargo. These deliveries pass through the terminals that TPL 2 use, and a well working system of terminals is therefore necessary.

TPL 2 does not own all vehicles that transport the customers' cargo. Today they own about 50 percent of all vehicles, because in some cases it is less expensive to purchase the transport services from other actors than to invest in more vehicles. The firm has many terminals in Sweden; each terminal has the possibility to reach customers within an area of 60-70 kilometers.

The transportation times are calculated and organized in a time schedule. If the transports are handled within the time defined by these schedules, the deliveries are deemed to have arrived on time. Today, TPL 2's delivery precision is 97-98 % on goods and 99 % on packages. The firm follows up the results at several times on every distance: at pick-up, terminals and extradition. Every deviation is reported, even if the freight arrives before scheduled time. The drivers are supposed to report their deliveries before 4 pm, but sometimes they miss this and report the day after. This leads to some misreporting occurring. Problems may arise due to unscheduled transports, but generally TPL2 is aware of 75% of their transports for the following day. If TPL 2 does not pick up a shipment, it is not included in the statistics, which may be misleading in comparison with other companies. TPL 2 usually states a delivery time with a variance of +- 15 minutes.

TPL 3

TPL 3 is part of a larger Group, and handles global transports. They are represented at several places in Sweden. They offer transport by air and sea, and are one of the leaders of these segments in Sweden. The company offers customized solutions and a wide range of additional services, such as warehousing, for its customers. Warehousing is offered at several places in Sweden. The company has two centers in Sweden where the freights are consolidated. The transportations to these centers are handled by TPL 3, and very rarely by other TPLs, depending on the decisions of the customer. TPL 3 co-operate mainly with "Core Carriers", when it comes to subcontractors.

TPL 4

TPL 4 is a global company, based in the United States but operational in about 220 countries. They have approximately 400 000 employees.

The company has no specific type of customer. The focus of the company is that of express deliveries of small loads, all the way to end customer, but it is not their only business. They perform larger more holistic transports of larger loads as well. This TPL does not have customers from one specific industry, but its most important customers work in the automotive and healthcare industries. Another industry that contains recurring customers is the textile industry, since these products are easily packaged. Many of its customers use this TPL's services to ship spare parts for existing products, since this TPL does not ship large, volume demanding products, but rather smaller, complementary products.

TPL 4 performs a rough segmentation of its customers, according to the level of turnover pertaining to a certain customers. They divide their customers into three segments, and assign different sellers to each segment. The segment of customers with least turnover are usually managed via a customer list, and contacted via telephone from this list. The next segment contains customers with higher turnover and is contacted personally by a seller. The third segment contains the largest and most important customers. These are assigned a contact person (key account manager) by TPL 4, with whom they handle most of their contact throughout the remainder of their business relationship.

TPL 4 currently has a delivery precision of 97,7%. The delivery precision is measured as the share of transports that were delivered according to what was agreed with customers. If the TPL fails to deliver the products on time, the customers are discounted on the shipping costs. If an order is failed to deliver and customers complain, usually internal consultants are dispatched to analyze where in the chain the problem has occurred and what can be done about it.

TPL 5

TPL 5 is a smaller company than the other TPLs. TPL 5 has roughly 8000 employees and is present within Europe. They provide logistical transportation services, as well warehousing and storage options for its customers. TPL 5 transport products by sea, road and air. TPL 5 transport products mostly within Europe, but also to some extent outside of Europe.

The customers of TPL 5 are not from any specific industry, but rather from a variety of industries. They strive toward having long-term relationships with their customers. Their oldest customer has been customer to TPL 5 since 30 years back. However, if the relationships are seen as long or short-term depends on the situation. TPL 5 has many customers with whom they have more short-term relationships as well.

Sales companies

UK

This sales company is in contact with the distribution center in Metz specifically, but also with other sites, such as the SDC in Metz, France. The sales company is responsible for contact with customers within the UK and Ireland.

The service that the sales company provides for customers consists of sales and contact with customers and the handling of supply of spare parts. Furthermore, the sales company has sales engineers who assist with the installation of products, and in that way providing service to its customers. These sales engineers also provide support and maintenance of products after installation. The sales company also provides storage opportunities for products on their way to end customer, however; roughly 80 percent of the orders handled by the sales company go straight to end customer without being stored in location at the sales company.

Of importance is the organization called Ofwat, an organization regulating the water industry in the UK and Ireland, and therefore decisions made by them has a direct influence on the way Xylem are able to do business in the UK and Ireland.

USA

W-US is the US Sales Company for Xylem's Water Transport and Treatment products, parts accessories and service. Except from distributing products from Emmaboda they also source some of the equipment from the other of Xylem's production sites. Their headquarters are located in Charlotte, NC but they also have 20 branches throughout the US and a Central Distribution Center located near Memphis TN. They also sell product through contracted 20-25 contracted Distributors.

Their function as an intermediary involves receiving customer orders from the US, handles the sales of Xylems products and provides technical support and repairs for the products. In addition to this they also have customer engineers that works at the US distribution center who provide the customers with support during and after the installations of the products. They also have a function as a distribution center inventory for half of the distributed product. The other half is delivered directly from the production site to the customers.

AUSTRALIA

The sales company in Australia consists of 14 different branches, located in a total of 14 different locations. These 14 locations consist of 2 supply warehouses in Sydney and Perth, and 12 service centers.

During the last couple of years the competition has increased, and the market can now be perceived to be more money driven than before. The holding of stock amongst the competing companies has increased. However, no other competing company has that much stock, since there is no infrastructure to support this.

SOUTH AFRICA

The sales company in South Africa imports products from many parts of the world. They distribute products in Sub-Saharan Africa as far north as the Congo. The sales company has a fully functional repair site in Africa for their products. The sales company also has a rental fleet of pumps that can be rented by customers for a predetermined daily fee. The sales company in South Africa has a list of items that they promise availability for its customers. They keep a certain stock of these standard parts, and they also have a safety stock.

The sales company in South Africa has close collaborations with distributors in specific regions of Sub-Saharan Africa. These distributors have special knowledge of the different countries and areas in which they operate. These distributors handle the installation of the products in the specific areas. The relationship with these distributors is a close relationship where both parties are bound to each other by contracts that they sign.

The majority of the transports to various parts of Africa are first transported to South Africa and after that transported on to their final destination. Thus the sales company in South Africa stores products on its way to the end customer. However, more critical products can be transported directly to end customer, and not pass the sales company in South Africa.