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Improving Supplier Volume Communication Within the Automotive Industry

A case study of buyer-supplier communication

Master's Thesis in the Master's Programme
Management and Economics of Innovation

MATILDA VAN DEN BROEK
MATILDA FLORÉN

Department of Technology Management and Economics
Division of Entrepreneurship and Strategy
CHALMERS UNIVERSITY OF TECHNOLOGY
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MATILDA VAN DEN BROEK
MATILDA FLORÉN

Supervisor, Chalmers: Joakim Björkdahl
Supervisor, the Company: Olivia Sesevic

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Department of Technology Management and Economics
Division of Entrepreneurship and Strategy
Chalmers University of Technology
SE-412 96 Gothenburg, Sweden
Telephone: + 46 (0)31-772 1000

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Abstract

Buyer-supplier communication, i.e. the exchange of information between a business organization and the suppliers, has an important role in the success of organizations. A non-effective communication might imply negative consequences in terms of not receiving resources on time or at all. Further, the communication affects how attractive a buying firm is perceived by its suppliers. This in turn decides whether or not a firm receives a preferential resource allocation by the suppliers in comparison to its competitors and is granted access to the suppliers' innovations. An effective communication is thus a prerequisite to be able to compete. The study of this master thesis is made in collaboration with the Volvo Group, one of Sweden's largest manufacturer of trucks, buses, construction equipment and marine and industrial engines. In 2017 the world market of trucks increased, which resulted in strong order books but also a stressed supply chain due to extraordinary high volumes. Not all suppliers were able to deliver according to demand, which lead to a low delivery precision. This affected the Volvo Group in a negative way, and indicated a need of an improved communication.

The purpose of this master thesis was to present suggestions regarding how the supplier volume communication of the Volvo Group can be improved in order to position the company as an attractive customer toward it suppliers and increase the delivery precision. Supplier volume communication refers to the communication in the purchasing process between the Volvo Group and the suppliers, concerning confirmed orders and forecasted volumes. In order to fulfill the purpose, the current supplier volume communication was mapped, and areas of improvement of the supplier volume communication were identified. The empirical data was collected through semi-structured interviews, an online survey, and internal documents. The findings were then analyzed and used to create recommendations of how to alter the supplier volume communication of the Volvo Group.

Six different areas of improvement of the supplier volume communication of the Volvo Group were identified, namely an unstructured interface toward the suppliers, the channels do not enable sufficient feedback, the suppliers do not utilize the forecasted volumes, a lack of common knowledge of what can and cannot be communicated, difficulties to reach the correct receiver, and outdated channels. The analysis of the areas of improvement resulted in recommendations of how to alter the supplier volume communication of the Volvo Group. The suggested actions aim to contribute to an increased customer attractiveness as well as an increased delivery precision by enhancing the effectiveness of the supplier volume communication.

Keywords: buyer-supplier communication, external business communication, volume data, customer attractiveness, delivery precision

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Gothenburg, June 2018

Matilda van den Broek and Matilda Florén

List of Abbreviations

BRM - Business Review Meeting
EDI - Electronic Data Interchange
GTO - Group Trucks Operations
GTP - Group Trucks Purchasing
IPS - Indirect Products and Services
S&OP - Sales and Operations Planning
VG - The Volvo Group

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1 Introduction

The following chapter describes the background of the research topic of the study, including a problem description and a presentation of the organization that the study is performed in collaboration with. Further, the purpose of the study is presented and finally, the limitations of the study are addressed.

1. 1 Background and Problem Description

External business communication is argued to have an important role in the success of organizations, and is defined as the exchange of information between a business organization and the external actors with which it interacts (Krizan et al., 2008). Mohr and Nevin (1990, p.36) emphasize the importance of external business communication by referring to the concept as "the glue that holds together a channel of distribution". Further, it can be argued that it is especially significant for an organization to have an effective buyer-supplier communication, i.e. the communication between a company and its suppliers, since this affects how attractive an organization is perceived by its suppliers. Being perceived as the most attractive customer, which is also referred to as possessing a preferred customer status, is desirable since it provides the buyer with a preferential resource allocation by the supplier in comparison to its competitors (Hüttinger et al., 2012). Moreover, the status entails benefits in terms of providing the buyer with advantageous access to the supplier's innovations, which has become increasingly important during the past years as the majority of innovations in high technological industries today come from suppliers. Thus, in order to gain preferential allocation of resources and innovations, it is important for buying firms to become as attractive as possible toward their suppliers, which emphasizes the significance of the buyer-supplier communication to be effective. The effectiveness of a firm's communication further affects the delivery precision, i.e. the precision of deliveries in terms of time and quantity. The delivery precision is directly affected by the communication, but also by the customer attractiveness since the delivery precision increases with a more preferential resource allocation. Lack of an effective communication can result in negative consequences in terms of not receiving resources or accessing innovations, which are necessities to be able to compete.

In order for firms to achieve an effective communication toward its suppliers, it is critical to keep up with the fast-paced environment that arises from the globalization and development of new technologies (Durante et al., 2012). The globalization has opened up for endless opportunities, but at the same time created a growing competitive landscape and an increasingly dynamic market (Britt, 2007). Technologies are rapidly advancing and in order to stay competitive it is now more important than ever for organizations to be innovative (Jong, Marston and Roth, 2015). Due to Internet and mobile phones, a swift change can be seen within information sharing and ways of communicating (Khaltarkhuu, 2013). Traditional communication channels and ways to formulate messages are becoming obsolete, which

organizations need to be aware of and act upon in order to maintain an effective buyer-supplier communication and position themselves as attractive customers toward the suppliers.

The study of this master thesis is performed in collaboration with the Volvo Group (VG), one of the world's largest manufacturer of trucks, buses, construction equipment and marine and industrial engines. During 2017, the demand for VG's trucks increased dramatically, which resulted in strong order books but also a stressed supply chain due to extraordinary high volumes. Not all suppliers were able to deliver according to demand, why the delivery precision was low. This affected VG in a negative way, and the situation emphasized the significance of being an attractive customer in order to receive a preferential resource allocation. This in turn indicated a need for a more effective communication toward the company's suppliers. VG has previously conducted studies examining the communication, more specific the supplier volume communication, that have indicated shortcomings of the company's current communication toward the suppliers. Supplier volume communication is an internally used concept at the Volvo group that refers to the communication in the purchasing process between VG and its suppliers, concerning confirmed orders and forecasted volumes. Thus, VG now addresses the question of how the supplier volume communication can be improved in order to position VG as an attractive customer and increase the delivery precision. The purchasing division within VG is divided into several sub-divisions according to different business areas. The sub-division concerning purchases of automotive products and parts for trucks and indirect products and services (IPS), Group Trucks Purchasing (GTP), constitutes the focus of this study. See figure 1.1 for organizational chart. When referring to the supplier volume communication of VG in this study, this concerns the volume communication between VG and its suppliers of truck automotive products and parts.

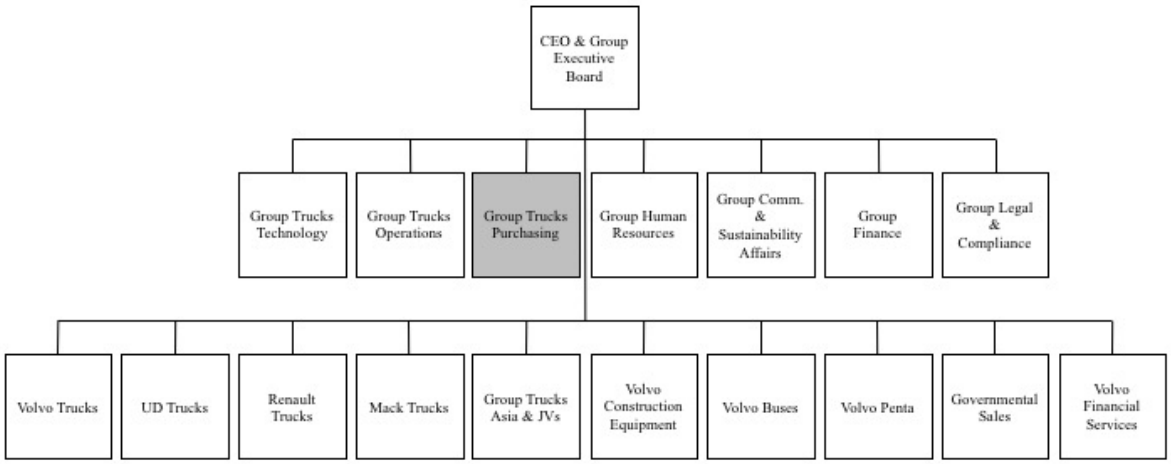

Figure 1.1: Organizational chart

1. 2 Purpose

The purpose of this master thesis is to present suggestions regarding how the supplier volume communication between VG and the suppliers delivering truck automotive products and parts

can be improved. This in order to enable VG to position itself as an attractive customer toward the suppliers and increase the delivery precision.

1. 3 Delimitations

The study of this master thesis is limited to only concern the external volume communication between VG and its suppliers, and does thus not examine the internal communication between the internal actors regarding the volume data communicated to the suppliers. The supplier base is limited to only include suppliers of truck automotive products and parts.

2 Literature

The following chapter presents the literature used in this study. The literature aims to provide the reader with an understanding of the subject and is later used in the analysis of the empirical findings. The chapter comprises three areas; communication within a business context, effective communication, and the impact of communication on customer attractiveness.

2.1 Communication Within a Business Context

This subchapter focuses on communication within a business context. First, the concept of business communication is presented, including a description of a general communication process. Thereafter, communication within the purchasing process is addressed, followed by channels used in the communication between buyers and suppliers.

2.1.1 Business Communication

Krizan et al. (2008) define business communication, i.e. communication within a business context, as the process of transmitting information between actors within a business environment. The aim of business communication is to establish a common understanding among the concerned parties. The concept of business communication can be categorized into internal and external business communication. Internal business communication concerns exchange of information among employees of a business organization, while external business communication refers to information exchanged between a business organization and the actors with which it interacts. Often, organizations have many external contacts with whom to maintain a communication with, e.g. customers, suppliers, media, and governmental agencies. Both internal and external business communication can be formal or informal, and written or oral.

A general communication process is illustrated in figure 2.1 below and comprises the following components: sender, receiver, message, channel, and feedback (Bolton, Guion and Kumaran, 1992). The sender is the actor who initiates the communication through transmitting the message, and the receiver is the actor for whom the message is intended. The message is defined as the transmitted information. The sender encodes the message, i.e. constructs it, which is then sent through a channel, and left for the receiver to decode, i.e. interpret. The last component, feedback, concerns the receiver's response to the message, and allows the sender to determine whether or not the message has been received and correctly understood (Lunenburg, 2010).

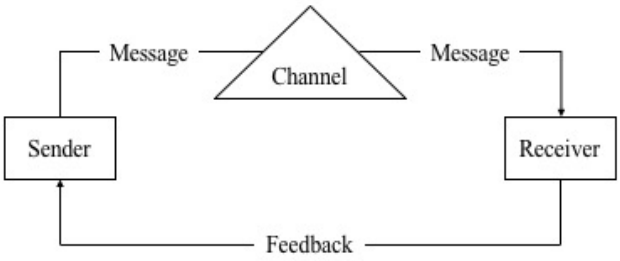

Figure 2.1: The communication process

2.1.2 Buyer-Supplier Communication in the Purchasing Process

Purchasing refers to the process of acquiring goods and services, and the activities connected to purchasing often involve several different parts of an organization (van Weele, 2014). Due to an increased amount of outsourcing, researchers argue that the purchasing activities have increased in the recent decades and today constitutes a more significant part of an organization's undertakings than before. The purchasing process might vary between organizations, yet there exist a number of common key elements. Figure 2.2 below illustrates a general purchasing process.

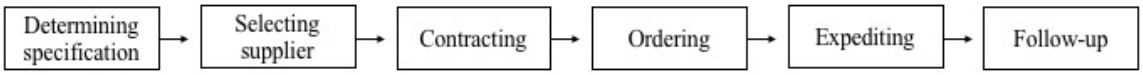

Figure 2.2: The purchasing process

The first step of the purchasing process illustrated above consists of determining the specifications in terms of quality and quantity of the goods and services that are to be bought (van Weele, 2014). When the specifications have been decided upon, the next step is to select the most appropriate supplier. To be able to do so in a consistent way, the buying organization must have an established routine for the procedure of supplier selection. The third step in the purchasing process, namely contracting, concerns preparing and conducting negotiations with the selected supplier. This step ultimately results in an agreement and a legal contract between the buying and supplying organizations. The next step, ordering, refers to placing an order with the selected supplier according to the previously decided conditions. After the order has been placed, expediting takes place, constituting the fifth step of the purchasing process. Expediting refers to monitoring and controlling the order to secure supply of the ordered goods and services. The sixth and last step of the purchasing process consists of following up and evaluating the supplier's performance. Although the purchasing process might vary between organizations, van Weele (2014) argue that buyer-supplier communication consistently constitutes an inherent part of the process, independent of company. After the initial step, when the required quality and quantity of the goods and services have been determined internally, communication between the buying and supplying organizations takes

place throughout the whole purchasing process, why van Weele (2014) stresses the importance of having a well-functioning buyer-supplier communication.

2.1.3 Channels for Buyer-Supplier Communication

The landscape of external business communication has changed drastically during the last decades, and the technology development has enabled new communication channels and possibilities to increase the effectiveness of the communication. Among purchasing professionals, a variety of media is today used to communicate with suppliers, including phone, fax, face-to-face, email, electronic data interchange (EDI), and Internet (Larson and Kulchitsky, 2000). While the first four presented channels are assumed to be self-explanatory, this chapter will address the two latter ones, namely EDI and Internet.

EDI enables structured exchange of business documents between organizations (EDI Basics, 2018). There exist several forms of EDI, e.g. direct EDI, also referred to as point-to-point EDI, and web EDI. Via direct EDI the documents are transmitted using a single secure line, while via web EDI the documents are exchanged through an Internet browser, without the need of the actors to install any software. Since EDI sends electronic messages created by a computer, it enables a higher speed than e.g. emails or paper-based communication that has to be handled by people. The use of EDI removes the human factor and hence reduces errors and costs in the communication.

The development of Internet has had a significant role in improving communication (EzTalks, 2018). Beside enabling web EDI, Internet has facilitated other new and creative ways of communicating and allowed people to be reached in a convenient way independent of their location. An example of a communication technology enabled by Internet is Skype, a telecommunications application software that provides video chats, voice calls, and instant messaging between computers, tablets, and mobile devices.

An increasingly common way for firms to communicate with their suppliers is through web conferences, webinars, and webcasts. Web conferences are used to replicate face-to-face meetings, this through the use of a software that facilitates video chats, such as Skype (Intermedia Anymeeting, 2011). The attendees of a web conference participate in the discussion and have the opportunity to speak and share digital material. Webinars, short for web-based seminars, is an online seminar where the presenter can interact with the attending audience. Usually, webinars start with a presentation, thereafter the audience is invited to ask questions. Webcasts are video or audio presentations distributed via Internet, using streaming media technology. The channel usually only allows one-way communication. It can be distributed live or pre-recorded, and require people to watch it within a specific time frame or not.

2.2 Effective Communication

Communication is perceived as successful, or effective, when the receiver correctly understands the message, the sender's purpose is achieved, and the two actors are linked through feedback (Kumar, 2010). This subchapter presents how to achieve effective communication, considering the construction of a message, the choice of communication channel, and the importance of feedback. Further, potential barriers to effective communication are addressed.

2.2.1 Construction of a Message

According to Bergin (1981), effective communication can be achieved through constructing the message according to seven principles. The author refers to his framework as the 7 Cs, and argues that it can be applied to both oral and written communication. The framework includes the following principles: consideration, clarity, completeness, conciseness, concreteness, correctness, and courtesy.

Consideration implies that the message should be constructed with the receiver in mind, and emphasizes a focus on the receiver's interest and needs (Bergin, 1981). Further, the principle addresses the importance of creating a positive emphasis and avoiding words with negative connotations, in order to make the receiver react more favorably. Clarity emphasizes the need of the message being correctly interpreted by the receiver, and is referred to as the most important principle. In order to provide clarity in the message, the sender should choose concrete, precise, and familiar words, but also focus on one specific issue, instead of trying to communicate too much at once. Clarity of the message can further be enhanced by completeness, which refers to providing the receiver with all the facts necessary to correctly understand the message. Completeness further includes providing the receiver with additional information whenever required.

The principle of conciseness addresses the importance of being brief by constructing the message in the fewest words possible (Bergin, 1981). This provides benefits in terms of time and cost saved, as well as enabling the important parts of the message to be emphasized. A concise message is more attractive to the receiver as it avoids unnecessary or repetitive information. Yet, conciseness must be enacted carefully without foregoing the remaining principles. Concreteness refers to communicating a message that is specific and definite, rather than vague and general. A concrete message enhances the likelihood of the receiver to understand what is required or desired of him or her, and minimizes the risk of misinterpretation. Correctness concerns both using the right level of language as well as accurate figure and facts. The last principle, courtesy, emphasizes the importance of being sincere throughout the communication. The message should express the sender's intention, while at the same time respect the receiver.

2.2.2 Choice of Communication Channel

During the last decades, the number of communication channels has increased due to the use of Internet. When choosing type of communication channel, it is important to look at the characteristics of the message that will be transmitted, as different channels are best suited for different purposes (Kulchitsky and Larson, 2000). Daft and Lengel (1986) has constructed a theory, referred to as the Media Richness theory, which builds upon that different channels are suited to convey different kind of information. They state that information has a degree of uncertainty and equivocality. Uncertainty is related to the absence of information, and equivocality is related to the ambiguity and misunderstanding of information. Since organizations strive to transfer information as effectively as possible, the aim should be to eliminate these two information contingencies when communicating, by using the right communication channel for the purpose.

Different channels differ in their capacity to transfer information efficiently, which makes different channels more suitable for processing certain information (Daft and Lengel, 1986). Daft and Lengel (1989) assume five different communication channels with decreasing richness; face-to-face, telephone, personal documents e.g. letters, impersonal documents, and numeric documents. The differences in richness depend on the capacity of the channel to provide instant feedback, personalization, variety in language, and number of used signals in the communication. The channel that is considered to be the richest out of the five is the face-to-face channel, since it allows all characteristics that a rich channel should possess (Daft and Lengel 1986). The channel with least richness is numeric documents, which is best suited for straightforward communication. Hence, the five different channels can be used for different purposes in order to convey the information as efficiently as possible. The face-to-face channel should be used in situations where there is a high degree of equivocality in the information, while numeric documents should be used when there is a high degree of uncertainty. In figure 2.3, the ratio between uncertainty and equivocality together with the best suited types of communication channels shows.

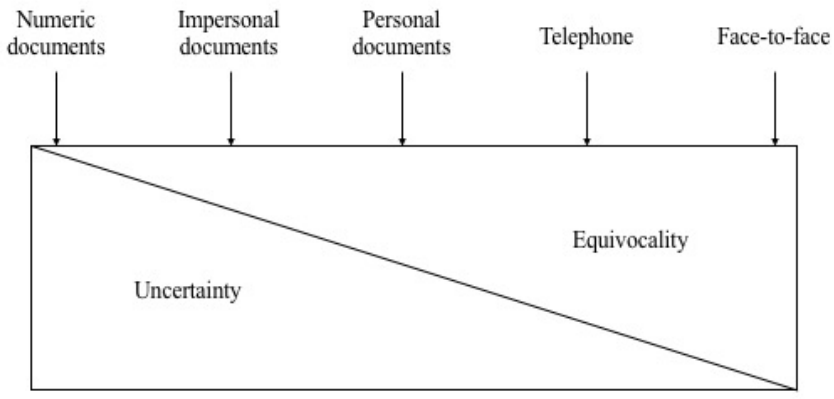

Figure 2.3: Choice of channel depending on the uncertainty/equivocality ratio

Considering the channels used in communication between organizations, the EDI channel can be categorized as a numeric document, and according to Kulchitsky and Larson (2000) this channel is the most efficient tool to use when placing purchasing orders between large

organizations. As earlier mentioned, another frequently used channel of today is Internet, which also can be categorized as a numeric document when transmitting standardized messages. Both the EDI and Internet are channels useful to transmit information with a high degree of uncertainty, and facilitate bigger speed and accuracy than traditional communication channels such as face-to-face.

2.2.3 The Role of Feedback in Effective Communication

As explained in chapter 2.1 *The Communication Process*, feedback concerns the receiver's response to the message (Lunenburg, 2010). When feedback occurs, the communication process is referred to as two-way communication, and when it does not occur, it is referred to as one-way communication. Two-way communication is perceived as more desirable as feedback enables a more effective communication. Kumar (2010) argue that feedback is one of the most important elements of the communication process.

Feedback allows the sender to determine whether or not the message has been received and correctly understood (Lunenburg, 2010). Further, feedback allows for evaluation of the effectiveness of the communication, and enables the sender to adjust the message. This will result in a higher accuracy, as the sender can ensure that the intended purpose is reached, i.e. that the communication initiates the intended action.

2.2.4 Barriers to Effective Communication

Communication is not always effective, i.e. that the receiver interprets the message in a correct way according to the sender's intention. Rai and Rai (2008) present five types of barriers to effective communication: physical barriers, semantic and language barriers, socio-psychological barriers, organizational barriers, and inter-cultural barriers. Physical, or external, barriers refer to obstacles that prevent the communicated message to reach the intended receiver. One reason for this could be defects in the channel, which can result in the message being delayed, distorted, or even lost in the transmission. Further, transmitting a lot of information can lead to information overload of the receiver. This can in turn lead to delay of feedback, or total lack of feedback due to that the receiver does not address the message.

Semantic barriers concern individual understanding of words and their meanings, and language barriers addresses different and multiple meanings of words (Rai and Rai, 2008). For example, the use of technical words can constitute a barrier to effective communication if the receiver does not have the same knowledge within the specific area of expertise. Another barrier can arise from using words that have multiple meanings or connotations. Socio-psychological barriers refers to problems of the receiver to understand, interpret, and respond to a message, which emerge from socially-learnt attributes as well as personal attributes. Organizational barriers refer to barriers stemming from the organizational structure. If information has to pass several different steps before reaching the intended receiver, the

message might be delayed or the information lost. The last barrier, concerning inter-cultural communication, addresses cross-cultural differences that naturally pose difficulties in communication. An emphasized inter-cultural barrier is the one that arises from differences in concepts of time. Different perceptions of time result in that work and social behavior vary a lot between cultures, including for example punctuality in the scheduling of activities.

2.3 The Impact of Buyer-Supplier Communication on Customer Attractiveness

Historically, the relationship between buyers and suppliers have been approached by both practitioners and academics with the assumption that in order to sell a product or service, the supplier attempt to become as attractive as possible toward potential buyers (Calvi, Gibbert and Schiele, 2012). During the recent years, a new phenomenon has gained increased interest in research, namely customer attractiveness. In their article, Hüttinger, Schiele and Veldman (2012) define customer attractiveness as the positive characteristics of a buyer toward a supplier. The ultimate objective for the buying firm is to achieve what is referred to as preferred customer status, which by Hüttinger et al. (2012) is defined as a situation in which the buyer receives preferential resource allocation by the supplier in comparison to competitors.

The significance of acquiring preferred customer status has increased, this due to limited availability of high quality suppliers and even scarcity of suppliers in some industries. Further, it is argued that the status entails benefits in terms of the supplier providing the buyer with advantageous access to the supplier's innovations, which has become increasingly important during the past years as the majority of innovations in high technological industries today comes from suppliers. Thus, in order to gain preferential allocation of resources and innovations, it is important for buyers to become as attractive as possible toward the suppliers. There are several factors affecting the attractiveness of a buyer toward the suppliers. Moody (1992) presents a number of characteristics of customer attractiveness, and emphasizes effective communication between the buyer and supplier as an important factor. Van Weele (2014), shares this opinion, and argues that a firm's communication toward suppliers influences its attractiveness as a business partner.

3 Methodology

This chapter describes the methodology of the study of this master thesis. Initially, the research design is presented, followed by a description of the research process. Continuously, the data collection, including a description of the structuring of the areas of improvement, is presented, followed by a description of the data analysis. Finally, the research quality of the study is addressed.

3.1 Research Design

There are two commonly known approaches of gathering information when conducting research, namely qualitative and quantitative approach (Easterby-Smith, Thorpe and Jackson, 2015). According to Alvesson (2003), a qualitative approach is suitable when expressions, experiences, impressions, and ideas are being studied, using data collection methods such as interviews, observations, and surveys. A quantitative approach is suitable when a study tests and explains certain subjects or assumptions, using data collection methods such as surveys, observations, and archival data (Easterby-Smith, Thorpe and Jackson, 2015). Since this study aims to investigate what areas of improvement existing in the supplier volume communication of VG today, and explore new ideas of how to improve it, this study uses a qualitative approach.

In order to fulfill the purpose of this study, a case study approach is used. According to Edmondson and McManus (2007), case studies are applicable for yielding and exploring new ideas and theories, and Ghauri and Gronhaug (2005) argue that it is a suitable approach to use when aiming to answer qualitative questions. Moreover, case studies enable the researcher to collect information from multiple sources, not having to rely on one single source of information (Bryman and Bell, 2007), why a case study approach is perceived as appropriate for this study. The study uses an iterative approach between empirical data and literature, as advocated by Dubois and Gadde (2002) to be appropriate for gathering a greater understanding of the findings.

3.2 Research Process

The process of this study is illustrated in figure 3.1, consisting of four stages. The study started with an initiation stage, where basic knowledge about the current situation was generated, and the problem and research scope were defined. In stage two, empirical data was collected through interviews, an online survey and internal documents. In parallel, a literature study was conducted. The empirical data together with literature were later analyzed in stage three. The fourth and last stage consisted of concluding the results of the analysis in order to present recommendations of how to improve the supplier volume communication of VG.

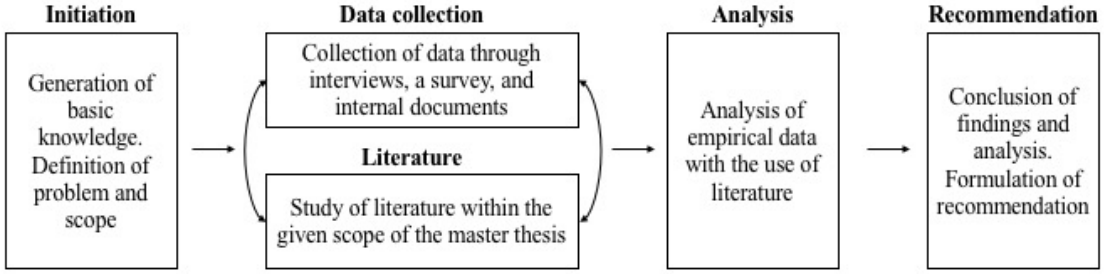

Figure 3.1: The research process

3.3 Data collection

For the purpose of this study, both primary and secondary data have been gathered. The following subchapter presents the primary data collection, consisting of data collected from interviews and an online survey, the secondary data collection, consisting of data collected from internal documents at VG, and finally the structuring of the empirical findings.

3.3.1 Primary Data Collection

Easterby-Smith, Thorpe and Jackson (2015) describe primary data as data collected directly by the researcher for the purpose of the specific study. The following parts present the primary data collection of this study, conducted through interviews and an online survey, and ends with a description of the sampling methods used.

3.3.1.1 Interviews

One part of the primary data was collected through interviews. When conducting interviews, the researcher can choose to either conduct structured, semi-structured, or unstructured interviews. According to Easterby-Smith, Thorpe and Jackson (2015), unstructured and semi-structured interviews open up for a deeper understanding of the subject, and allow the interviewees to elaborate on topics that otherwise might have been excluded. Unstructured and semi-structured interviews do not only enable an understanding of the interviewee's viewpoint, but also an understanding of why the interviewee has this specific viewpoint. Bryman and Bell (2007) argue that semi-structured interviews, compared to unstructured interviews, tend to yield data that is easier to interpret. Further, the authors advocate that semi-structured interviews are more favorable when the researcher has a clear focus on what questions the study aim to answer, rather than just investigating a topic (Bryman and Bell, 2007).

The study of this master thesis has a distinct purpose, as it aims to create recommendations of how to improve the supplier volume communication of VG. Thus, semi-structured interviews were decided to be appropriate. The interview templates, which are to be found in Appendix

A, consists of open-ended questions in order to create an open discussion and enable the interviewees to speak freely about their experiences. As the interviews progressed, follow-up questions on the interviewees' answers were continuously asked. The interviews were primarily conducted face-to-face and in those cases when the interviewee was not present in Gothenburg, the interview was conducted via Skype. During the interviews, one of the researchers asked questions, while the other took extensive notes to document the interview. Additionally, all interviews were recorded with permission from the interviewees.

The interviews were conducted in two different blocks, addressing the current supplier volume communication and areas of improvement of the supplier volume communication respectively. The interviews were conducted with employees from four divisions within VG, namely GTP, Group Trucks Operations (GTO), Sales, and Investor Relations were interviewed with the purpose to establish a clear picture of the internal view of the supplier volume communication. The divisions of GTP, GTO, and Sales are all involved in the process of sales and operations planning (S&OP), concerning the volume data communicated to the suppliers, why it was decided to interview people belonging to these divisions. Further, as VG is a publicly listed company, it is vital to consider the confidentiality aspect of the communicated data, why a person at the division of Investor Relations was interviewed. Table 3.1 below presents a list of the conducted interviews.

Company	Division	Date	Subject
Volvo Group	GTP	2018-02-12	Current supplier volume communication
Volvo Group	GTP	2018-02-14	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-20	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-22	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-22	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-26	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-26	Areas of improvement of the supplier volume communication
Volvo Group	GTP	2018-02-28	Areas of improvement of the supplier volume communication
Volvo Group	GTO	2018-02-15	Current supplier volume communication
Volvo Group	GTO	2018-02-15	Areas of improvement of the supplier volume communication
Volvo Group	GTO	2018-02-16	Areas of improvement of the supplier volume communication
Volvo Group	GTO	2018-02-21	Areas of improvement of the supplier volume communication
Volvo Group	GTO	2018-02-27	Areas of improvement of the supplier volume communication
Volvo Group	GTO	2018-03-20	Areas of improvement of the supplier volume communication
Volvo Group	Sales	2018-02-22	Areas of improvement of the supplier volume communication
Volvo Group	Investor Relations	2018-02-28	Areas of improvement of the supplier volume communication

Table 3.2: Interview schedule

The interviews addressing the current supplier volume communication aimed to establish an understanding of the situation of the supplier volume communication at VG today. The interviews were conducted with two identified key people at GTP and GTO respectively, shown in table 3.1. The two interviewees were agreed upon to have sufficient information about the channels, messages, feedback, and actors involved in the current supplier volume

communication. The interviews resulted in a map of the current supplier volume communication, presented in chapter 4.1 *Current Supplier Volume Communication*. The map was adjusted as the study progressed and the researchers gained a deeper understanding of the current supplier volume communication of VG.

In order to identify areas of improvement of the current supplier volume communication, interviews were conducted with key people from the divisions of GTP, GTO, Sales and Investor Relations, shown in table 3.1. In total, 14 interviews were held and the interviewees were asked to speak freely about their experiences of the supplier volume communication. This data, together with the data collected through the online survey, constitutes chapter 4.3 *Areas of Improvement.* The gathered data was further used as a basis for the online survey that was sent to suppliers.

3.3.1.2 Survey

In addition to the interviews, primary data was collected through an online self-completion survey. The purpose of the survey was to identify areas of improvement through the external perspective of the suppliers.

In order to secure speed and be able to conduct the study within the time limit of the thesis, a survey was chosen in order to be able to get the opinions of a larger part of the suppliers than could have been achieved through interviews. Since GTP have approximately 4061 suppliers of truck automotive products and parts operating globally, a lot of time would be needed if interviews would have been chosen as data collection method. Easterby-Smith, Thorpe and Jackson (2015) argue that surveys are efficient when the researcher wants to collect data from a large group of people, and discuss two different ways of conducting surveys, namely interview administered surveys and self-completion questionnaires. The advantage of self-completion questionnaires is that it is resource efficient and has a lower cost per respondent than interview administered surveys, this since it does not require the researcher to spend time on completion of each questionnaire. However, the lack of personal contact with the respondents in self-completion surveys often results in lower response rates. Easterby-Smith, Thorpe and Jackson (2015) argue that a 20% response rate can be deemed good. The diffusion of Internet has made self-completion questionnaires even more popular, this since web-based surveys do not require the same amount of time and effort from the respondent as before when the respondent was required to send the survey back to the researcher when the survey was completed.

Out of the 4061 suppliers that provide VG with truck automotive products and parts, an email with a link to the online survey was sent to in total 2727 suppliers. The email included a description of the purpose of the survey and emphasized the significance of the suppliers to share their opinions in order for VG to be able to improve the supplier volume communication. The survey was open for two weeks, with a reminder sent out after one week in order to encourage the suppliers to take the opportunity to share their view on the subject.

The survey got 653 responses, which equals a response rate of 24%. This is a stronger response rate than what Easterby-Smith, Thorpe and Jackson (2015) argue to be good for a self-completion questionnaire. However, in this case it can be discussed whether or not the result is good, since the suppliers should be interested in contributing to an improved supplier volume communication, as they are heavily relying on a good relationship with VG.

The survey contained 10 questions and was designed in different blocks, focusing on channels, messages, and feedback, respectively. The survey template is to be found in Appendix B. The survey was designed to contain as few open-ended questions as possible, as advocated by Curtis (2008). The questions concerning how the suppliers would like the supplier volume communication to work yet had to be open-ended. This in order to enable as free and elaborative answers as possible, and to not restrict the respondents' minds by offering certain alternatives. In order to ensure the quality of the survey, a significant amount of time was spent on designing the questions. The questions were constructed after the interviews had been conducted, which enhanced the creation of accurate and motivated questions since a lot of insight about the current supplier volume communication were gained through the interviews. Using as accurate and adequate questions as possible minimized the risk of misinterpretations of the questions. To further ensure the quality, the survey was sent out in advance to a number of key people within VG for comments before it was sent to the suppliers. The result of the survey is presented in chapter 4.2 *Perception of the Current Supplier Volume Communication* and in chapter 4.3 *Areas of improvement*. The result of the survey is to be found in Appendix C.

3.3.1.3 Sampling

As stated, the data collection in this study was primarily done through qualitative interviews and a qualitative online survey. Within qualitative research there are several different sampling methods to use. Easterby-Smith, Thorpe and Jackson (2015) mention purposive sampling and snowball sampling as two frequently used sampling methods. In purposive sampling, the purpose of the study gives some clear criteria for which sample units are desirable for the study. The researcher then approaches potential units to check if they meet the criteria, and the ones that do are used in the study. In snowball sampling, a person who meets the criteria for the desired sample is included as the first person in the study. This person is then asked to suggest others who meet the criteria and could be useful for the study. In cases when the researchers have no established relationships with suitable interviewees, Easterby-Smith, Thorpe and Jackson (2015) argue that snowball sampling is an effective way of approaching people.

In this study, a mix of snowball sampling and purposive sampling was used for selecting a sample for the interviews. The process started with that the researchers' supervisor at VG denoted several interview objects that met the criteria of the study, which were then contacted and asked to participate. During the initial interviews, some of the interviewees proposed a couple of additional potential interview objects, who were then gradually contacted as the

study progressed. Moreover, a few of the interview objects where identified by the researchers to be useful for the study, why they were also asked to participate.

To distribute the online survey, an email list including the suppliers of truck automotive products and parts with whom VG spend more than 10 M SEK annually was used. This email list included 2727 suppliers of truck automotive products and parts, operating globally. All suppliers responding to the survey have been equally considered, and no classification has been done regarding e.g. what country they operate within or for how long they have worked with VG. The researchers chose to use this contact list in order to quickly reach a substantial number of suppliers. This sample constitutes approximately 67% of the whole population of 4061 suppliers.

3.3.2 Secondary Data Collection

Easterby-Smith, Thorpe and Jackson (2015) describe secondary data as already existing data that the researcher collects. In this study, secondary data was collected in form of internal documents at VG. The documents were collected through the researchers' supervisor at VG and during interviews with employees at VG, and constitute documents such as presentation slides describing different operations in the company as well as earlier studies conducted at VG. The secondary data collection was conducted in order to get a deeper understanding of the supplier volume communication.

3.3.3 Structuring of the Empirical Findings

Easterby-Smith, Thorpe and Jackson (2015) argue that before starting the analysis, the collected qualitative data should be organized in a systematic and appropriate format in order for the researcher to be able to easily retrieve fragments of data that can be used in the analysis. Thus, the empirical findings of this study were structured in order to find the areas of improvement of the supplier volume communication, identified through the interviews and the survey. The identified areas of improvement were acknowledged using the definition of a problem, which is by Business Dictionary (2018) defined as "a perceived gap between the current state and a desired state". These were extracted from the collected data by coding the data according to the problems brought up in the interviews and the survey and then screening the problems falling within the scope of the study. The identified areas of improvement are presented in chapter 4.3 *Areas of Improvement*.

3.4 Data Analysis

As explained in part *3.3.3 Structuring of the Empirical Findings*, prior to the analysis, the empirical data was structured according to areas of improvement. The analysis, presented in chapter *5. Analysis*, is structured accordingly. The areas of improvement were chosen to

constitute the base of the analysis since the purpose of this study is to suggest recommendations of how to improve the supplier volume communication of VG. The areas of improvement were analyzed with regards to selected literature presented in chapter *2 Literature*. The literature was used to confirm identified issues and analyze their impact on the effectiveness of the communication, as well as to identify possible solutions and opportunities for enhanced communication. The possibilities for enhancement of each identified area of improvement were then synthesized and presented as recommendations in chapter 6 *Recommendations.*

3.5 Research Quality

To assess the quality of quantitative studies, the criteria of validity, reliability, and objectivity are commonly used (Guba and Lincoln, 1989). Bryman and Bell (2007) argue an alternative approach to assess the quality of qualitative studies, including the following criteria: credibility, transferability, dependability, and conformability. As the study of this master thesis is qualitative, the later set of quality criteria are used to assess the quality of the research.

3.5.1 Credibility

Credibility responds to the quantitative criterion of internal validity, and refers to the match between the result of the study and the interviewees' perceptions of reality (Aastrup and Halldorson, 2003). Credibility can be achieved through triangulation and respondent validation (Bryman and Bell, 2007). Triangulation can be performed in terms of data, methodology, theory, and investigator (Flick, 2009). Data triangulation refers to the use of different sources to gather data, while methodological triangulation concerns the use of multiple methods to gather it, such as interviews, surveys, and documents. Theory triangulation involves the use of more than one theoretical perspective to interpret the data, and investigator triangulation refers to that multiple researchers participate in the research process.

To ensure credibility of this study, both respondent validation as well as triangulation were used. Considering respondent validation, this was conducted on the data collected through interviews in terms of summarizing and validating the findings in the end of each interview. Further, the supervisor at VG read the final paper and validated the parts where she had knowledge. To further ensure credibility, methodological triangulation, data triangulation and investigator triangulation were used. To collect data concerning areas of improvement of the current supplier volume communication, both interviews, an online survey, and internal documents were used, which respond to methodological triangulation. Further, data triangulation was used in terms of gathering data from two different sources, namely from employees at VG and from suppliers to VG. Investigator triangulation was used to ensure the

credibility throughout the study, as the master thesis was conducted by two researchers who consistently shared the same view of the results of the research.

3.5.2 Transferability

Transferability relates to the quantitative criterion of external validity and concerns the extent to which the study can make general claims about reality and be applied to other contexts, situations, times, and populations (Halldorson and Aastrup, 2003). Bryman and Bell (2007) discuss that it is difficult to generalize a case study since it concerns a specific company and situation. Thus, the transferability of this study is considered to be moderate, since a case study approach has been used, with a focus on a specific organization's context. The areas of improvement highlighted in this study are strongly connected to this specific case, and so are the recommendations. However, similar areas of improvement could be found in the supplier volume communication of other organizations, and since a thorough description of the context of this study is provided, it can be argued that it is made easy for future researchers to assess how well this study could be applied to other contexts.

3.5.3 Dependability

Dependability responds to the quantitative criterion of reliability (Halldorson and Aastrup, 2003), and is defined as the stability of data over time, i.e. the extent to which a replication of the same or similar instruments of the same phenomenon generates a similar result (Lincoln and Guba, 1989). In this study, dependability is achieved through a detailed methodology chapter, including attached interview templates and a survey template. Since the sampling of the interviewees was done through non-probability sampling methods, it is hard to ensure that the same interviewees would be chosen once again. However, the interviewees chosen for this study are argued to have extensive knowledge of how the supplier volume communication works and of the perceptions of the rest of the organization. It can thus be argued that as long as the interviews are conducted with people with similar experience and seniority, a similar internal result would be generated. The sample of suppliers constitutes the suppliers of GTP with whom VG spend more than 10 M SEK annually. This sample is considered generalizable as it includes suppliers who have a clear picture of how the supplier volume communication of VG works, and have regular contact with GTP. If a survey were to be conducted once again with the same purpose, it would be easy to use the same email list of suppliers and thus generate the same sample. Thus, the dependability of this study is argued to be low, i.e. if a replica of this study would be conducted, it is argued to generate a similar result.

3.5.4 Confirmability

Confirmability relates to the quantitative quality criterion of objectivity, and addresses whether or not the findings are biased (Halldorsson and Aastrup, 2003). In order to achieve

conformability, the researcher must set aside his or her personal values (Bryman and Bell, 2011). In this study, confirmability is ensured through two researchers participating in the research process, constantly questioning the objectivity. Further, the collected data has continuously been discussed with both the supervisor at Chalmers University of Technology as well as the supervisor at VG. Several people within VG have also read the end report in order to ensure conformability.

4 Empirical Findings

This chapter presents the empirical findings of the study. Initially, in order to provide the reader with an empirical context, the current supplier volume communication at VG is presented, followed by a description of the internal and external perceptions of the supplier volume communication. Finally, the identified areas of improvement that later are to be analyzed are described.

4.1 Current Supplier Volume Communication

The study of this report focuses on the supplier volume communication of VG, which refers to the communication in the purchasing process between the company and its suppliers, concerning confirmed orders and forecasted volumes. Part 2.1.2 *Buyer-Supplier Communication in the Purchasing Process* entails a description of a general purchasing process and its different stages. The supplier volume communication that constitutes the focus of this study responds to the fourth step, referred to as ordering. This subchapter provides the reader with an understanding of the current supplier volume communication between VG and the suppliers of truck automotive products and parts. The supplier volume communication is visualized below in figure 4.1, which is a result of the findings from two internal interviews with a representative from GTP[1] and a representative from GTO[2] respectively, which are described in part 3.3.1.1 *Interviews*. The figure illustrates the actors involved in the supplier volume communication (represented by rectangles), the channels used for transmitting messages (represented by triangles), and the flow of communication (represented by arrows). The supplier volume communication is explained in detail below.

[1] Employee at GTP, interview 2018-02-12
[2] Employee at GTO, interview 2018-02-15

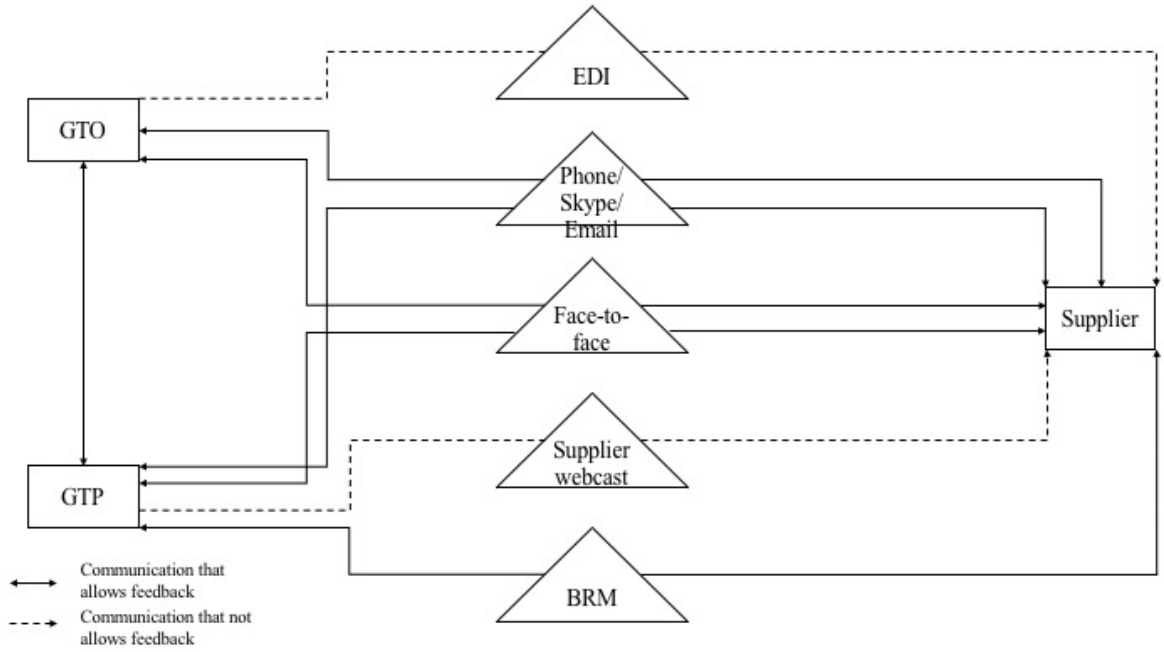

Figure 4.1: Map of the current supplier volume communication

4.1.1 Channels and Messages

The different channels used in the supplier volume communication of VG include the following; electronic data interchange (EDI), supplier webcast, business review meeting (BRM), phone/Skype/email, and face-to-face meetings. EDI, supplier webcast, and BRM are used in standardized manners to forward information to the suppliers. Phone/Skype/email and face-to-face meetings are used occasionally when direct contact with the suppliers is needed. Additionally, the supplier volume communication includes a portal, referred to as the Supplier Portal. The different channels are presented below, accompanied by a description of the message that is communicated via each channel respectively.

Electronic Data Interchange
EDI is a channel for sending electronic messages between VG and the suppliers via computers, for a more detailed description see chapter 2.1.3 *Channels for Supplier-Buyer Communication*. Within the supplier volume communication of VG, EDI is used to communicate volumes in terms of confirmed orders as well as forecasted volumes. The confirmed orders are updated daily, while the forecasted volumes are updated eleven times per year, more specifically once a month except for one month during summer. The forecasted volumes are predicted 12 months ahead, and are constructed in the S&OP process. In the S&OP process, the long-term volumes are forecasted by balancing the predicted market demand with the capacity of VG's plants.

EDI is the most frequently used channel, as it allows daily updates of confirmed volumes and is a fundamental channel through which all orders and invoices are handled. The channel does not allow for any feedback to be provided, which means that VG are not able to know

whether the suppliers have seen the updated volumes and/or taken action accordingly. Between VG and the suppliers both direct EDI and web EDI are used. The web EDI is reached through the Supplier Portal. Generally, VG uses direct EDI when communicating with large suppliers with whom it exchanges a lot of documents, and web EDI when communicating with smaller suppliers.

Supplier Webcast

The supplier webcast is a video presentation distributed to the suppliers of VG via Internet, and is used to communicate forecasted volumes. It works as a complement to the EDI, in order to concretize and abridge the many figures shown in the EDI. There exist two types of webcasts, referred to as the Powertrain webcast and the Group Trucks webcast respectively. The Powertrain webcast is produced and aired once a month and provides suppliers with forecasted volumes accompanied by an explanation. The communication aims to enable the suppliers to take instant action in their manufacturing activities. The Group Trucks webcast is produced and aired less frequently, and is used in order to communicate quarterly data. Compared to the Powertrain webcast, the Group Trucks webcast entails more general data and market trends, and does not present as thorough figures.

Suppliers of truck automotive products and parts with whom VG spends more than 10 M SEK annually receive invitations to the different webcasts depending on what products they manufacture. The invitations are sent by email, and the webcasts are to be found at the Supplier Portal. As for the EDI, the supplier webcast does not allow feedback. Currently, there is a tool provided that can show statistics on how many of the suppliers have clicked on the link to the webcasts. This tool is provided by the producer of the system used for the supplier webcasts and can be reached through a website.

Supplier Portal

The Supplier Portal is a web-based platform where VG shares information with the existing suppliers. The portal contains both general data, in terms of e.g. documents of regulations, and supplier-specific data, in terms of e.g. evaluation documents and contact details. There is no volume data communicated through the Supplier Portal itself, however, the supplier webcast as well as the web-EDI are reached via the Supplier Portal.

Business Review Meeting

In the volume communication with the main suppliers, BRM is used with the aim to help prepare the main suppliers for the coming period. Main suppliers refer to the suppliers whose components are crucial for VG's production of trucks. How often the BRMs are held depends on the specific supplier, but the meetings are usually held yearly. The meetings are conducted face-to-face with the concerned supplier, where standardized powerpoint slides, referred to as BRM kits, are used as a base for discussion. In connection to each new quarterly financial report, the BRM kits are updated. Additionally, the latest supplier webcast is commonly discussed and elaborated on during the meetings, and the meetings end with summarizing what have been decided, e.g. in terms of actions the suppliers and VG should take, respectively.

Since the BRMs are held face-to-face, the channel allows for feedback, meaning that the suppliers can give instant feedback on the communicated information. For example, the suppliers can let the representative of VG know that they do not understand some part of the information, or confirm that they will act according to what has been discussed during the meeting.

Phone/Skype/Email
Phone, Skype, and email are used in the daily communication concerning volumes between VG and its suppliers. The channels are also used when something urgent needs to be communicated and/or when there is a need for instant feedback on the transmitted message. Since phone and Skype means direct contact, the channels allow instant feedback. Email is a two-way communication, meaning that it also allows feedback.

Face-to-face Meeting
Face-to-face meetings are used for a relation-building purpose with a proactive intention to create trust between VG and the suppliers. The channel is also used when emergencies have occurred and there is a need for crisis response, e.g. when a supplier is not able to manufacture products according to demand. The channel allows instant feedback through direct contact.

4.1.2 Actors

The supplier volume communication is conducted between VG and the suppliers. The internal actors at VG participating in the supplier volume communication are parts of the GTP or GTO divisions. These have regular contact with each other, as they are both active in the work concerning volumes. The different actors involved in the supplier volume communication are presented below.

Volvo Group Trucks Purchasing
GTP handles the purchasing activities and has the main responsibility of communicating volume data to suppliers. For each supplying company, GTP provides a contact person who is responsible for the communication in the purchasing process and whom the supplier can turn to when they have questions, referred to as supplier host. From GTP, information is communicated through phone/Skype/email, face-to-face meeting, supplier webcast and BRM. Phone/Skype/email is used in the daily volume communication between GTP and the suppliers, since it is a two-way communication that allows instant feedback on the information. Face-to-face meetings are used both in a relation-building purpose and to inform the supplier about an extraordinary occasion, e.g. when the supplier must prepare for larger volumes than usual. GTP further produces and distributes the supplier webcasts. The message communicated via the supplier webcast is produced in collaboration with GTO. Moreover, GTP is responsible for producing the supplier BRM kits, as well as conducting the BRMs.

Volvo Group Trucks Operations
The division of GTO is responsible for VG's operations, including e.g. manufacturing and logistics. GTO's primary responsibilities concerning the supplier volume communication consist of updating the EDI with confirmed orders and forecasted long-term volumes, as well as constructing the forecasts of the long-term volumes. The forecasts are constructed in collaboration with the division of Sales in the S&OP process earlier described, where the sales division generates the predicted market demand for GTO to balance with the capacity of VG's plats. Sales has no direct contact with the suppliers, and is thus not included as an actor in the supplier volume communication. Besides EDI, GTO communicates with the suppliers via phone/Skype/email and face-to-face meetings. Further, as described earlier, GTO is involved in the production of the supplier webcast.

Suppliers
Suppliers constitute the central actor of the supplier volume communication, and receive information from VG via all earlier presented channels. There are no standardized ways for suppliers to transmit information to VG. In the current supplier volume communication, the channels that allow suppliers to contact VG are phone/Skype/email, BRM, and face-to-face meetings with their supplier host.

4.2 General Perceptions of the Current Supplier Volume Communication

This subchapter presents general perceptions concerning the supplier volume communication of VG, collected both internally through interviews, and externally through an online survey. The interviews and the survey are described in part 3.3.1.1 *Interviews* and 3.3.1.2 *Survey* respectively.

Concerning the internal perception of the supplier volume communication of VG, the interviewed employees at VG share the opinion that the supplier volume communication has room for improvement. The majority of the interviewees believe that the stressed supply chain situation of 2017 was partly a result of a non-effective supplier volume communication, and are of the opinion that an enhanced communication would help VG to position itself as an attractive customer toward its suppliers and increase the delivery precision.

Among the interviewed employees at VG, there exists a common perception that the communication channels of today are becoming obsolete. They experience that there is a need for modern channels responding to the increased demand of user-friendliness a and the digital era of today. Concerning the information communicated, the interviewees believe that this could be improved, both in terms of quantity and quality. Further, there is a general request to enable an increased amount of feedback, in order to establish a two-way communication.

Concerning the external perception of the supplier volume communication, the online survey revealed the suppliers' opinions of the subject. Figure 4.2 below, illustrating the perceptions

regarding the currently used communication channels, indicates that the suppliers are generally satisfied with the existing channels. Yet, approximately 10% of the respondents are dissatisfied or very dissatisfied with each channel.

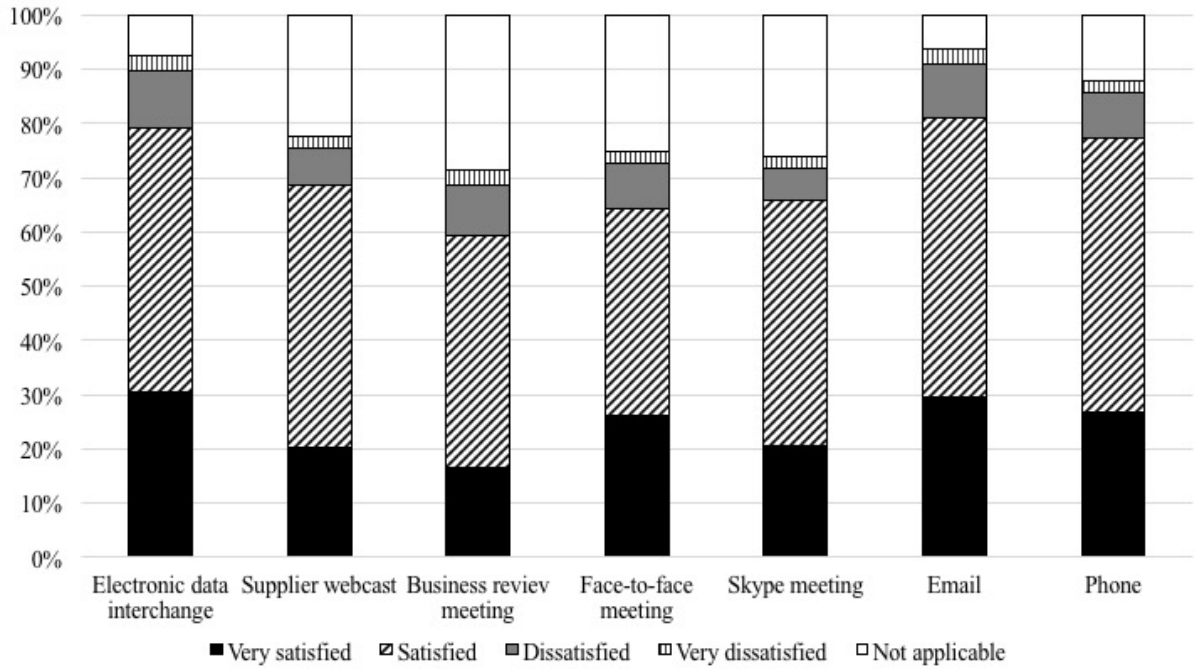

Figure 4.2: The supplier satisfaction of the channels

Regarding the messages communicated in the supplier volume communication, the suppliers' perceptions are illustrated in figure 4.3 and 4.4. Figure 4.3 shows that 82% of the respondents of the survey are satisfied or very satisfied with the volume data that they receive from VG. Yet, figure 4.4 indicates that only 71% believe that they are provided with sufficient volume data.

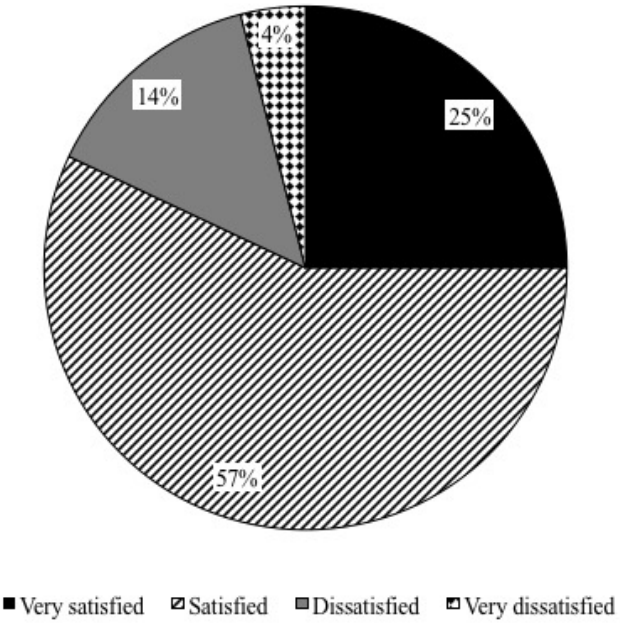

Figure 4.3: The supplier satisfaction of the quality of the volume data

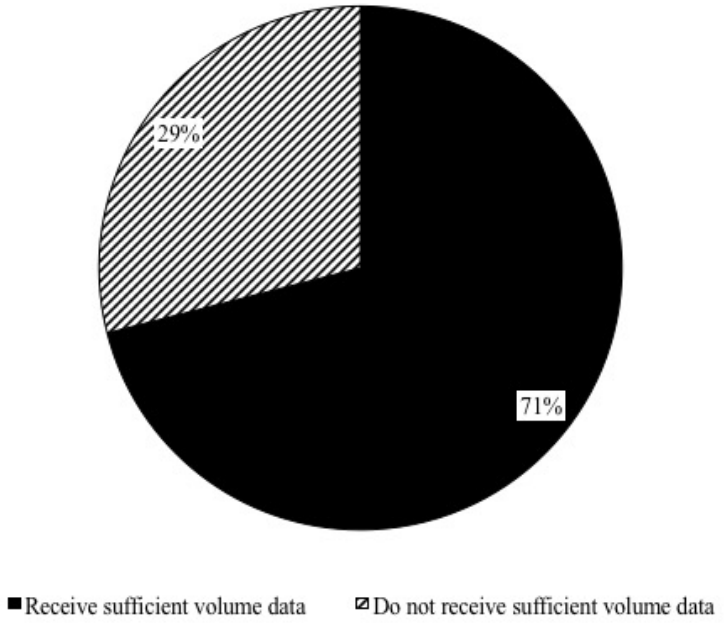

Figure 4.4: The supplier satisfaction of the quantity of the volume data

Figure 4.5 visualizes the supplier satisfaction concerning whether or not they believe they are able to provide sufficient feedback on the volume data they receive from VG. 89% of the suppliers responding to the survey are of the opinion that they can provide enough feedback, while 11% are not.

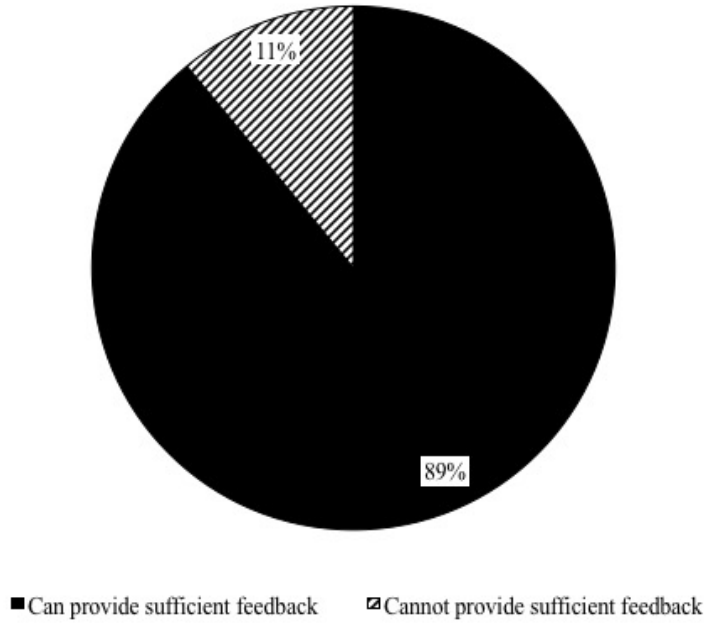

Figure 4.5: The supplier satisfaction of the feedback

4.3 Areas of Improvement

This subchapter presents areas of improvement, identified through interviews with employees at VG, and through an online survey responded to by suppliers. The interviews and survey are described in part 3.3.1.1 *Interviews* and 3.3.1.2 *Survey* respectively.

4.3.1 An Unstructured Interface Toward the Suppliers

The first area of improvement of the supplier volume communication concerns the number of interfaces VG has toward the suppliers. This in terms of both number of different employees at VG that are in contact with the suppliers as well as number of different channels that are used in the supplier volume communication.

The interviews with employees at VG reveal that the volume communication toward the suppliers are conducted by several actors, and that this might lead to confusion among the suppliers in terms of not knowing who to contact within VG. An employee at GTO[3] explains:

"Today, there is not only one person handling all contact with a specific supplier. Thus, it is difficult for the suppliers to know who to contact within the company."

This is confirmed by the survey, where the suppliers express that they often experience problems in terms of not knowing who their contact person within VG is and that the supplier

[3] Employee at GTO, interview 2018-02-15

host frequently changes, which leads to confusion. The respondents of the survey further mention that they occasionally receive different information from different sources within VG. The following comments, extracted from the result of the survey, illustrate two commonly expressed wishes among the suppliers:

"I would like an updated list of contact details of people to talk to."

"To make it more structured, have people from all departments speak through one voice and communicate the same information."

According to the interviewed employees at VG, the issue of there being a lot of actors communicating with the suppliers also creates confusion internally. This in terms of not knowing who have communicated with the suppliers, nor what has been communicated. This might in turn lead to non-appropriate information being faulty shared with suppliers. The following quotes, by an employee at GTP[4] and an employee at GTO[5] respectively, emphasize the severity of this issue:

"The different actors within VG do not understand the outcome of what they communicate. Sometimes, the suppliers take advantage of information they have gotten from other parts of the company, which effects negotiations in a negative way."

"Different communication coming from different parts of the company decreases the trustworthiness of VG."

Concerning the issue related to the number of different channels used in the supplier volume communication, this has been raised by several of the interviewed employees from both the GTP and GTO divisions. The following quotes, by two employees at GTP[6][7] respectively, summarize the shared perception among the interviewees:

"Today, there exist several different channels in the supplier volume communication. A lot of different channels eventually get insufficient since the communication gets unstructured, and the suppliers do not know where to look for the right information."

"The communication has to be consistent from the suppliers' perspective. To achieve this, any new channel that is added must be integrated in the existing solution to not make the communication more unstructured. If it is not integrated, it should be a clear reason for that."

[4] Employee at GTP, interview 2018-02-20
[5] Employee at GTO, interview 2018-02-16
[6] Employee at GTP, interview 2018-02-26
[7] Employee at GTP, interview 2018-02-28

Moreover, the survey reveals another problem regarding the number of different channels. The suppliers explain that sometimes they receive different volume data from different channels. For example, the information communicated via EDI can differ from the information sent via email by e.g. the supplier host. Since the suppliers are not aware of which channel that was updated most recently and provides the correct figures, they do not know which information to trust.

4.3.2 The Channels Do Not Enable Sufficient Feedback on the Volume Data

The second area of improvement consists of a lack of sufficient feedback on the communicated volume data. According to several of the interviewed employees at VG, the two primary channels used to communicate volumes today, namely EDI and supplier webcast, do not enable feedback to be transmitted. The channels do only facilitate one-way communication, why suppliers have to use other communication channels to provide feedback on the communicated volumes. The interviewees explain that the suppliers rarely respond to the communication, which leads to difficulties for VG to know whether or not the suppliers have received the volume data and taken actions accordingly. The following quote by an employee at GTP[8] emphasizes the significance of the issue:

"Volvo sends out a lot of information without knowing if it is seen or understood. Thus, we just have to hope that the suppliers contact us if they are not able to produce according to our request."

According to the responses to the survey, a majority of the suppliers are of the opinion that they are able to give sufficient feedback on the volume data. However, as shown in figure 4.5, 11% of the respondents do not believe that they are able to provide enough feedback. The result of another question shows that 58% of the suppliers request a quick and easy way to provide feedback. This is further elaborated on in the comments to the survey, where several suppliers ask for a solution to give more feedback in order to establish a two-way communication between VG and the suppliers.

A majority of the interviewees from VG state that EDI is the most crucial channel for the supplier volume communication to work. Yet, it is explained that it is currently not possible for VG to know whether or not the suppliers have seen the updated volumes or how much of the long-term forecasts they have taken part of. Thus, several of the interviewees mean that it would be useful to receive direct feedback on the EDI. An employee at GTP[9] and an employee at GTO[10] respectively comment:

[8] Employee at GTP, interview 2018-02-26
[9] Employee at GTP, interview 2018-02-14
[10] Employee at GTO, interview 2018-02-21

"I would like to know if the suppliers have taken part of all information available when planning their production."

"It would be very useful to get a notice if the suppliers are having troubles with producing according to the volumes."

The responses to the survey show that the suppliers perceive this issue as particularly important when the volume data in EDI is changed in near time, close to delivery dates. For these cases, the suppliers emphasize the importance of being able to give instant feedback, and state that today's channel do not provide a standardized way to do so. The suppliers further express that it would facilitate for cooperation if they were able to share their volume capacity with VG also at times when they do not experience problems with delivering according to demand.

Concerning the supplier webcast, there exists a common perception among the interviewed employees at VG that the suppliers appreciate the webcast as a useful complement to the volumes communicated via EDI. However, a substantial part of the interviewees states that the channel does not allow sufficient feedback to be provided. They further explain that VG does not know whether or not the suppliers have understood the message, nor if the message should be changed to improve the quality of the supplier webcast. An employee at GTO[11] says:

"The supplier webcast is a one-way communication channel, thus we do not know how the information lands at the supplier."

Further, several employees at GTP expresses a wish of not having to actively retrieve the statistics. The current system provides statistics in terms of number of clicks, but entails no details of who has watched it, and the statistics have to be manually retrieved by the employees through the website. This issue is elaborated on in the quotes below, by an employee at GTP[12]:

"I want to see what is happening. We produce the webcast but do not receive feedback on how it is used."

"When the webcast has expired I want an email with feedback. I don't want to go to the website and look it up, it is too time-consuming."

4.3.3 The Suppliers Do Not Utilize the Forecasted Volumes

[11] Employee at GTO, interview 2018-03-20
[12] Employee at GTP, interview 2018-02-14

The third area of improvement concerns the way suppliers use the forecasted volumes. Several of the interviewed employees at VG experience issues related to the forecasted volumes communicated via EDI. A common perception is that the suppliers do not utilize the long-term forecasts when planning their operations, which implies consequences in terms of low delivery precision. When investigating why this is the case, the interviewees from VG raise the following three reasons; the suppliers do not trust the forecasted volumes, the channel requires the suppliers to actively retrieve the forecasted volumes, and/or the suppliers do not find the forecasted volumes explanatory enough.

The result of the survey confirms the internal perception that not all suppliers utilize the full 12 months forecasts communicated via EDI. When the suppliers were asked how far in the future they consider the forecasted volumes when planning their operations, it turned out that 25% do not consider the full 12 months forecasts. Out of these, 11% of the suppliers only look 1-4 months ahead, and 14% look 1-8 months ahead. The survey further confirms the three internally identified reasons of why the suppliers do not utilize the 12 months forecasts. Out of the suppliers who responded that they do not take part of the full 12 months forecasts, 58% indicate that one reason for this is that they do not trust the forecasted volumes. The remaining two reasons are also confirmed, by 15% of the respondents answering that they find it too time consuming to actively retrieve the forecasted volume data from the EDI, and 12% answering that they do not find the forecasts explanatory enough. Additionally, the result of the survey reveals that another reason why not all suppliers are looking at the full 12 months forecasts is that not all are able to see the 12 months forecasted volumes.

Concerning the first reason of the suppliers not utilizing the forecasted volume data, namely the suppliers not trusting the forecasted volumes, this is according to the interviewees from VG a result of a history of non-accurate forecasts. Two employees at GTO[13][14] respectively explain:

"Historically, there have been situations where we have decreased the volumes close to order date. This has resulted in the suppliers not trusting our forecasts, but rather perceiving them as optimistic figures."

"The suppliers do not trust our forecasts, and do not consider the communicated volumes more than 2-3 months in advance. This results in them not being able to deliver according to our demands."

As stated above, the result of the survey confirms that the suppliers of VG perceive the accuracy of the forecasts as an issue. It appears that some of the suppliers find VG worse than other customers at producing accurate forecasts. The issue of non-accurate forecasts causes problems when VG due to this has to make late changes in the volumes communicated via EDI, without taking the suppliers' lead-time into consideration. According to the suppliers,

[13] Employee at GTO, interview 2018-02-27
[14] Employee at GTO, interview 2018-02-16

the changes are sometimes even done within the confirmed periods in the EDI. This is illustrated by the quote from one of the responses in the survey:

"Sometimes VG changes the volumes too close to delivery date. This means that either I do not have time to meet the increased demand, or I am left with goods that I cannot sell."

Regarding the second reason, consisting of the suppliers having to actively retrieve the forecasted volumes, the following quote is extracted from an interview with an employee at GTP[15]:

"A reason for the suppliers not planning according to our forecasted volumes is that it is time-consuming and frustrating to manually have to look for updated volumes."

The interviews have revealed that the suppliers are not always aware of when VG has updated the forecasts in EDI, and thus do not know when to retrieve data to adjust their plans accordingly. This is further highlighted by the survey where 71% of the suppliers answer that they wish to get information when the forecasted volumes are updated in EDI. Moreover, some of the suppliers wish for VG to inform them when the forecasts increase or decrease above a certain percentage.

Concerning the third reason, namely the suppliers not finding the forecasted volumes explanatory enough, an employee at GTO[16] explains:

"EDI is a good way to communicate figures, but what is missing is an explanation regarding why the forecasted volumes are high or low. For this purpose, the supplier webcast intends to give a general explanation of the volumes, but I believe it is not specific enough. It is difficult for the suppliers to relate their work to the general information communicated."

This is further emphasized in the responses to the survey, where the suppliers ask for more detailed explanation of the figures shown in EDI. Several of the respondents comment that they appreciate the supplier webcasts, but that they believe that the communicated information is too general and that the channel does not enable a two-way communication, which is requested.

The fourth reason of the suppliers not utilizing the forecasted volume data is revealed by the survey responded to by suppliers. Several of the suppliers comment that the reason for them not considering the full 12 months forecasts when planning their operations is that they are not being provided with the data. However, when addressing this issue in an interview with an employee a GTO[17], the interviewee argue that all suppliers are provided with forecasted

[15] Employee at GTP, interview 2018-02-22
[16] Employee at GTO, interview 2018-02-27
[17] Employee at GTO, interview 2018-02-27

volumes for the full period, and that the issue thus must be located at the supplier's side. The interviewee explains:

"VG provides all suppliers within the supplier base with 12 months forecasted volumes via EDI. If a supplier cannot take part of the full period, it is most likely due to incorrect settings at the supplier's side."

4.3.4 A Lack of Common Knowledge of What Can and Cannot Be Communicated

The fourth area of improvement is related to transparency. Several interviewees imply that VG is not transparent enough toward its suppliers, i.e. not communicating enough detailed figures. Also the responses to the survey show that the suppliers request increased transparency from VG. The following quotes, extracted from interviews with employees at GTO[18] and GTP[19] respectively, are accompanied by numerous opinions of the same character:

"We have to be more transparent in order for the suppliers to be able to respond to our demand."

"We cannot expect suppliers to deliver correct volumes if we do not communicate the volume data."

Interviewees yet claim that VG has the possibility to be transparent in the supplier volume communication, and that the major issue consists of a lack of a common understanding of what can and cannot be communicated. When interviewing an employee at Investor Relations[20], the division that is responsible for the relationship with the company's financial stakeholders, the interviewee comments on the transparency issue as follows:

"We at Investor Relations know what information that is price sensitive and what is not, and thus can and cannot be communicated. This knowledge must be transferred to the supplier hosts, the ones who are communicating with the suppliers. The problem is rather the accuracy of the forecasted production volumes versus actual outcome, which has not been good enough. This has led to suppliers sometimes questioning the EDI data provided. From a transparency perspective, VG has for many years been disclosing truck market forecasts for the big regions 12-18 months ahead, as well as order intake per region on a quarterly basis. This is on top of the 12 months forecasts on part number level."

This is elaborated on by an employee at GTO[21], who says the following:

[18] Employee at GTO, interview 2018-02-16
[19] Employee at GTP, interview 2018-02-26
[20] Employee at Investor Relations, interview 2018-02-28
[21] Employee at GTO, interview 2018-03-20

"When the supplier hosts do not know what they are allowed to communicate and not, the risk is that they do not communicate anything at all in fear of revealing confidential information."

The suppliers responding to the survey emphasize this issue, as they share their experiences from situations where their supplier host could not provide them with explanatory information about the volume data. Several respondents express an opinion of the supplier hosts lacking a deeper knowledge about the volume data, which is illustrated in the following two quotes, extracted from the result of the survey:

"Sometimes when I ask my supplier host for more information about the volume data, I get the response that he does not have any information to give since it is not his job."

"It is hard to get any other information than the figures in EDI. When we have asked the supplier host, we are told to look in the EDI."

4.3.5 Difficulties to Reach the Correct Receiver

The fifth area of improvement is found in today's lack updated contact details to the suppliers. Obsolete contact details result in difficulties of reaching the intended person within the supplying company. An employee at GTP[22] shares the findings from a previous study concerning the supplier webcast:

"The study showed that a common issue is that the invitations are sent out to the wrong person, or even worse, do not reach the supplier at all."

According to the interviewees, this issue is still present. The invitations to the supplier webcast are sent via email to approximately 2000 contacts and out of these, approximately 500 results in a bounce back message, i.e. the email could not be delivered. This is further confirmed by the survey where several of the suppliers comment that they do not receive the invitation to the webcasts as they are supposed to. According to interviewed employees at VG, it is the responsibility of the supplier host of each supplying company to ensure that the contact details are updated.

Another issue related to the invitations to supplier webcast is that the invitation is only sent to two or three people within each specific company. An employee at GTP[23] elaborates on the issue:

"Today, the invitations to the supplier webcasts are only sent to a few people within each supplying company, and it is these people's responsibility to show the webcast to other that are interested. This results in not everyone that is affected by the supplier webcast sees it."

[22] Employee at GTP, interview 2018-02-20
[23] Employee at GTP, interview 2018-02-22

4.3.6 Outdated Channels

The sixth area of improvement concerns a lack of modern channels. Among the interviewed employees of VG, there is a common perception that the current communication channels are becoming outdated and non-efficient, and that there is a need for modern channels responding to the digital era of today. An interviewee from GTP[24] states:

"Today's systems were developed many years ago, and are not user-friendly."

Another interviewee from GTP[25] emphasizes the need for mobile channels by saying the following:

"Today, people want to be able to access information independent of where they are, through apps in their mobile phones or tablets. In order for the suppliers to listen and respond to our communication, we have to make the channels more convenient for them to use."

The need for mobility is further emphasized in the responses to the survey, where several suppliers express a wish of being able to access the volume data more easily. The result of the survey shows that 20% of the respondents want to be able to access volume data through an app in their smartphone or tablet, which further stresses the need for mobile solutions.

[24] Employee at GTP, interview 2018-02-26
[25] Employee at GTP, interview 2018-02-26

5 Analysis

The following chapter presents the analysis of this study, based on the identified areas of improvement of the supplier volume communication of VG. The analysis results in recommendations of how to improve the supplier volume communication, presented in the end of the chapter.

5.1 Analysis of the Areas of Improvement

The following subchapter includes analyses of the six different areas of improvement presented in subchapter 4.3 *Areas of improvement*. The areas of improvement are analyzed with the use of literature, presented in chapter 2 *Literature*.

5.1.1 Analysis of the Unstructured Interface Toward the Suppliers

In this part, issues related to the unstructured interface of the supplier volume communication are analyzed. The interface is criticized to be unstructured both in terms of number of actors at VG communicating with the suppliers and number of channels used, and appears to give rise to both internal and external issues. The area of improvement is analyzed according to both number of actors and number of channels, with respect to the internal as well as the external perspective.

Concerning the number of actors, it has been revealed that there are many different actors at VG who are in contact with the suppliers regarding the volume data. As illustrated in figure 4.1, the divisions of GTP and GTO are involved in the supplier volume communication. Within each of the two divisions, there are multiple actors communicating with the suppliers, which imply a high degree of complexity. Internally, this causes confusion, and employees at different parts of VG express that they do not know who have communicated with the supplier nor what information has been communicated. This further results in the suppliers perceiving the communication from VG as unstructured, since they occasionally receive different information from different actors within the company and do not always know who to contact in different situations. The fact that there are many different actors within VG that communicate with the suppliers is not aligned with the company's external communication directive. According to the directive, it is only GTP or the purchasing function in each business area that are allowed to send information, which is not complied with today.

In order to achieve an effective communication, it is important to strive to minimize the level of ambiguity (Daft and Lengel, 1986). When the suppliers get different information from different actors within VG, ambiguity is inevitable since it is almost impossible for the suppliers to know what information to trust. Further, the interviews with employees at VG reveal that this unstructured flow of information sometimes leads to that the suppliers receive information that they were not supposed to receive, or that should have been communicated

by another actor at VG. The interviewees emphasize that faulty given information might have a negative impact in negotiations, which implies that the issue of an unstructured interface can leave VG in a less favourable position and impose higher costs for the company in terms of disadvantageous contracts. Thus, the number of actors communicating with the suppliers is an important area to address in order to achieve an effective communication. The supplier volume communication would become more structured if decreasing the number of internal actors at VG participating in the communication and ensuring that the communicated information is consistent independent of the source.

Concerning the number of different channels included in the supplier volume communication, the issue is emphasized both internally and externally. The interviewed employees at VG do not believe that the number of different communication channels affect the internal work at VG in a negative way, but express a concern that the number of channels are too many for the suppliers to handle, and thus affect the suppliers in a negative way. However, the internal perception of what constitutes the issue does not align with the external perception. The number of different communication channels used is per se not an issue that is raised by the suppliers responding to the survey. Instead, the number of different communication channels rather cause confusion for the suppliers due to ambiguous information being communicated via different channels. The fact that the information communicated through the different channels is not aligned leads to excessive ambiguity in the communication, which results in a less effective communication where the suppliers once again do not know which information to trust. This further emphasizes the significance of ensuring that that the communication is consistent in order to enhance the effectiveness of the communication, in this case independent of the channel used.

5.1.2 Analysis of the Channels Do Not Enable Sufficient Feedback on the Volume Data

Here, the area of improvement concerning channels not enabling sufficient feedback is analyzed. This area of improvement consists of two different issues, namely the channels not enabling the provision of feedback on communicated volume data, and a lack of detailed statistics of the effectiveness of the communication. Internally, both issues are emphasized, while externally only the former one is raised, why the issues are analyzed accordingly.

The issue of the channels not enabling the provision of feedback on communicated volume data was identified from data collected both internally and externally. Yet, the internal perception is more homogeneous than the external. Employees at VG consistently argue that today's primary channels for communicating volume data, namely EDI and supplier webcast, do not allow any feedback to be provided. However, among the suppliers answering to the survey only 11% believe that they are not able to provide sufficient feedback. It is suggested that the difference between the internal and external perceptions of the question is because the suppliers do not experience the issue unless they have difficulties to deliver the requested volumes to the plants and thus wish to give feedback. The suppliers who are able to meet the

requested volumes do not need to provide feedback and are thus not experiencing the shortcomings connected to this. However, 58% of the suppliers responding to the survey express a wish for a more convenient way to provide instant feedback on the communicated volume data, which indicates that a substantial part of the suppliers yet would find it beneficial to be able to provide feedback more easily.

According to Kumar (2010), feedback is an essential part of effective communication. Thus, regardless that the issue is not as emphasized externally as it is internally, feedback is a vital aspect to consider in order to improve the supplier volume communication of VG. In addition, Lunenburg (2010) explains that feedback allows the sender to determine whether or not the message has been received and correctly understood, and ensures that the intended purpose is achieved, i.e. that actions are taken accordingly. Thus, today's lack of a standardized way to provide feedback on the information communicated via EDI and supplier webcast implies a non-effective communication, and a need for VG to establish a convenient way to provide feedback on the volume data communicated via these channels. The need for sufficient feedback is further emphasized in form of a wish to enable two-way communication, expressed both internally and externally. This request is in line with what Lunenburg (2010) argues, that two-way communication is perceived as more desirable than one-way communication as it enables a more effective communication, why this should be strived toward.

Internally at VG, the interviewed employees also experience a lack of feedback regarding how effective the communication is. The interviewees express a wish of an enhanced way of viewing statistics of the supplier webcast, that allows to see not only the number of viewers, but more specifically who has watched the webcast and who has not, as well as what information in the supplier webcast suppliers use for what purposes. This kind of feedback does according to Lunenburg (2010) provide the sender with the opportunity to evaluate the message's effectiveness and adjust it if necessary. Thus, more detailed statistics of how the supplier webcast is used would enable VG to increase the effectiveness of the communication.

5.1.3 Analysis of the Suppliers Do Not Utilize the Forecasted Volumes

This part entails an analysis of the area of improvement concerning the suppliers not utilizing the forecasted volumes communicated via EDI. The analysis is structured according to the reasons for this issue, which are identified to be four; the suppliers not trusting the forecasted volumes, the channel requiring the suppliers to actively retrieve the forecasted volumes, the suppliers not finding the forecasted volumes explanatory enough, and not all suppliers being able to see the forecasted volumes. The first three reasons are emphasized both internally and externally, while the fourth reason is only raised by the suppliers responding to the survey.

This area of improvement was first identified through interviews with employees at VG and later confirmed in the survey responded to by suppliers. The suppliers not utilizing the full 12 months forecasts when planning their operations can be perceived as detrimental for the

success of VG, as it has consequences in terms of the suppliers not being able to respond to demand. According to Kumar's (2010) definition of effective communication, a successful communication results in the sender's purpose being accomplished, which cannot be achieved if the receiver does not take part of the information communicated. In this case, not all suppliers are taking part of the communicated information and are thus not able to respond to demand, i.e. the communication is not resulting in the sender's intended purpose. Hence, this area of improvement is considered to be highly important to address in order to improve the supplier volume communication of VG.

Concerning the first reason of the suppliers not utilizing the forecasted volumes, namely the suppliers not trusting the communicated information, this is a reaction to a history of non-accurate forecasts that have resulted in late changes in volumes close to delivery date, which have caused production issues for the suppliers. The importance of communicating accurate information is emphasized in literature. In the 7 Cs framework of how to construct a message in order to achieve effective communication, Bergin (1981) advocates the principle of correctness, which refers to the message containing accurate figures and facts. This emphasizes the importance to enhance the correctness of the communicated information, in VG's case, in terms of the level of accuracy of the forecasted volumes, in order to increase the number of suppliers utilizing the forecasts.

Concerning the second reason, consisting of the suppliers having to actively retrieve the forecasted volumes, the suppliers find it time-consuming to manually have to look for updated volumes, and instead wish to be informed when new forecasts are available in EDI. The survey shows that 71% of the suppliers wish to be informed when the forecasted volumes are updated in the EDI. It can be argued that this wish responds to a general trend of the information society of today, concerning the preferred way of receiving information. As people are exposed to an excessive amount of data, they wish to get information delivered instead of having to actively retrieve it. Thus, a more convenient way to be acknowledged of when new data is available in EDI would help increase the number of suppliers that utilize the volume data. However, when considering increasing the amount of delivered information, it should be acknowledged that this could lead to information overload of the receiver, explained by Rai and Rai (2008) to be a barrier to effective communication. According to Rai and Rai (2008), transmitting a lot of information can lead to important messages not being addressed by the receiver. Nonetheless, this risk is in the case of VG considered to be minor, since the suppliers of VG are requesting this kind of solution.

Concerning the third reason of the suppliers not utilizing the forecasted volumes, namely the suppliers not finding the forecasted volumes explanatory enough, the suppliers express a wish of more detailed explanations of the figures communicated via EDI. This issue can be approached by using another principle of Bergin's (1981) 7 Cs framework, namely completeness. Completeness refers to that the message should contain all the facts necessary to correctly understand the message, which is not fully the case of VG's current supplier volume communication. Thus, to improve the effectiveness, the communication of forecasted volumes should be extended to include more details. Concerning how this can be conducted,

EDI as it is constructed and used today does not allow communication of more explanatory data. According to the Media Richness theory by Daft and Lengel (1986), the supplier volume can be decided to have a high degree of uncertainty. Since EDI is categorized as a numeric document it is argued to be the most suitable tool for transmitting purchasing orders between organizations (Kulchitsky and Larson, 2000). Kulchitsky and Larson (2000) further argue that EDI facilitates a high speed and accuracy when communicating data with a high degree of uncertainty, which confirms the appropriateness of using EDI to communicate confirmed orders and forecasted volumes between VG and the suppliers. Yet, an additional channel is required in order to provide the suppliers with an explanation of the volume data. VG's supplier volume communication today includes two different webcasts that air monthly and quarterly respectively, with the aim to function as a complement to the EDI. However, the webcasts are criticized to be too general, and are thus not responding to the need of more detailed information. The negative consequences of communicating too general and vague messages are confirmed by Bergin (1981) who emphasizes the importance of concreteness. Bergin (1981) argues that it is important to construct a specific and definite message in order to obtain an effective communication. Further, webcast only allows one-way communication and hence does not enable the sender to ensure that the message has been correctly understood (Lunenburg, 2010). Thus, communicating explanatory information regarding the forecasted volumes via a channel that allow feedback would help increase the number of suppliers who utilize the volume data.

The fourth and final reason of the suppliers not utilizing the forecasted volumes was not considered internally by the interviewed employees at VG, but expressed by suppliers in comments to the survey. The reason consists of not all suppliers being able to see the full 12 months forecasts in EDI. VG is yet communicating 12 months forecasted volumes to all suppliers, why the issue seems to be a result of incorrect settings of the system at the affected suppliers' side. As concluded in the first paragraph of this chapter, a prerequisite to achieve an effective communication is that the receiver addresses the communicated information. However, if the intended receiver does not receive any information, there exists nothing for the receiver to address, which seems to be the scenario of this case. Thus, in order to increase the number of suppliers who utilize the volume data, it would be necessary that VG ensures that all suppliers receive and are able to see the forecasted volumes for the full 12 months period.

5.1.4 Analysis of the Lack of Common Knowledge of What Can and Cannot Be Communicated

In this part, the area of improvement concerning a lack of common knowledge of what can and cannot be communicated is analyzed. The issue is raised both internally and externally, and is analyzed with respect to both perspectives.

Since VG is a listed company on the stock exchange market, there is certain information within the supplier volume communication that is of such sensitive nature that it can affect the

share price if leaking. Stemming from the large amount of sensitive information existing in the supplier volume communication, this area of improvement initially appeared to be a pure transparency issue, where VG is not able to communicate sufficient information to the suppliers. Findings from interviews show that some of the employees believe that VG cannot be transparent enough toward its suppliers, which also shows in the survey where the suppliers are requesting a higher degree of transparency from VG in order to be able to perform in an optimal way. However, it is concluded that VG has the possibility to be transparent enough toward the suppliers and that the primary issue instead consists of an internal knowledge gap at VG, where there is a lack of a common understanding of what can and cannot be communicated.

According to an interviewed employee at the division of Investor Relations, the degree of transparency is not the major issue. Internally at VG, there exists knowledge of how transparent the company can be toward the suppliers. Yet, this knowledge is not diffused to all parts of the company. The employees communicating with the suppliers do in many cases lack knowledge of what can and cannot be communicated, resulting in uncertainty and fear of spreading classified information. This knowledge gap leads to an externally raised issue, concerning the suppliers not always being granted additional information by their supplier host when expressing a need for further explanation of the forecasted volume data. This might lead to trust issues and a deteriorated relationship between the supplier and the supplier host, which impacts VG negatively. Bergin (1981) advocates completeness as a principle for construction of an effective message. Completeness refers to that the message should be constructed to provide the receiver with all facts necessary to understand the message. The supplier hosts' lack of background knowledge about the forecasted volumes communicated via EDI could thus be seen as a barrier to provide the suppliers with a complete message, which in turn inhibits an effective communication. An increased level of information sharing concerning the forecasted volumes, together with clear guidelines regarding the allowed level of transparency, would help close the knowledge gap and establish a common knowledge of what can and cannot be communicated. This would in turn help improve the effectiveness of the supplier volume communication.

5.1.5 Analysis of Difficulties to Reach the Correct Receiver

Here, the area of improvement concerning difficulties of reaching the correct receiver at the supplier, is analyzed. This issue stems from a non-optimal management of contact details and the communicated information not being directly sent to all intended receivers, and is analyzed with respect to both the internal and external perspectives.

One issue within this area of improvement concerns the way VG manages the contact details of the suppliers. Both interviews and the survey reveal that the contact details are not constantly updated, which causes problems in terms of the information not reaching the recipient. It is the responsibility of the supplier host of each supplying company to ensure that the contact details are updated. The interviews indicate that VG is not sure that the suppliers

correctly receive the information, which is confirmed by the survey where the responses show that a substantial part of the suppliers do not receive information as they should. This issue appears to be especially prominent concerning the supplier webcasts, where several of the respondents state that they do not receive the invitations to the webcasts. Interviews with employees at VG have revealed that approximately 500 out of 2000 invitations to the webcasts do not reach the receiver. In order to achieve an effective communication, a prerequisite is that the information reaches the intended receiver (Kumar, 2010). Since a substantial part of the information transmitted via the supplier webcast does not reach the receivers, the communication is prevented from being effective. The management of contact details is thus an important issue to address in order to ensure that the suppliers receive the information communicated by VG.

Another issue within this area of improvement concerns the fact that VG only sends the invitation to the supplier webcast to two or three people within each supplying company. It is the responsibility of these specific persons to coordinate to show the supplier webcast to affected and interested parties within the company, as the webcast has firewalls and cannot be forwarded. If the supplier host has not provided contact details to all affected parties within the supplying company, it requires time and effort from the contact person to take this responsibility. If the contact person misses to share the information, the information will stay at the first receiver, which in turn might result in important information not being considered by the intended receivers at the supplying company when planning the production. This issue can be linked to one of the barriers to effective communication, namely the organizational barrier, which concerns the organizational structure. Rai and Rai (2008) mean that if information has to pass several distinct steps before reaching the receiver, information risk to be delayed or lost along the way. This is what happens when VG sends information to the suppliers and the information has to go through several steps and does not reach all intended recipients immediately. In the supplier volume communication, loss of information and delays can lead to consequences for VG in terms of lower delivery precision, implicating the severity of this issue. By instead transmitting the information directly to all intended receivers, the organizational barrier that arises today could be eliminated.

5.1.6 Analysis of the Outdated Channels

This part entails an analysis of the area of improvement concerning a perceived lack of modern channels, with regards to the internal and the external viewpoints. In the analysis, user-friendliness and mobility are addressed.

The choice of communication channel has a significant impact on the effectiveness of the communication (Daft and Lengel, 1989). Thus, the area of improvement concerning the channels being outdated is important to address in order to improve the supplier volume communication of VG. The issue is emphasized both internally and externally. Interviewed employees at VG argue that the currently used channels are becoming outdated and non-efficient, and that there exists a need for a higher degree of user-friendliness. Further, the low

degree of mobility is emphasized to be an issue both internally and externally, and there exists a common request for mobile solutions. 20% of the suppliers responding to the survey express a wish to be able to access the volume data through an app in their smartphone or tablet. It can be argued whether or not 20% is a substantial part of the suppliers, however, it is suggested that the reason why not a larger number respond that they would like an app solution is due to the common phenomenon of that people do not know what they want until they are presented with it. Thus, the low degree of mobility is yet concluded to be an important shortcoming of the current supplier volume communication. As of today, it is for example not possible to watch the supplier webcast from a mobile device since the currently used Supplier Portal is not compatible with mobile devices. The request for a higher degree of mobility and user-friendliness is likely to be a result of the difference in convenience between the communication channels people use at home and the communication channels VG provide. People are increasingly expecting to be able to access work-related data independent of their location, through user-friendly channels. Thus, in order to improve the supplier volume communication in terms of modernity of the channels, mobility and user-friendliness are important aspects to consider.

6 Recommendations

From the analysis above, addressing the identified areas of improvement, the following recommendations are constructed with the aim to improve the supplier volume communication of VG. The recommendations will help to position VG as an attractive customer toward its suppliers and increase the delivery precision.

First, in order to structure the interface toward the suppliers, VG is recommended to map and structure, and when possible reduce, the number of actors communicating with the suppliers concerning the volume data. This will decrease the internal uncertainty by enhancing the knowledge of who has been in contact with the suppliers and eliminate the issues arising in negotiations when the suppliers have been given wrong or faulty given information. It will also enable the suppliers to know whom within VG to contact in different situations, as the number of contact persons will be decreased. Further, to reduce the ambiguity in the communication and eliminate the confusion occurring at the suppliers when they get different information from different actors and channels, VG must ensure that the volume data communicated to the suppliers is consistent independent of source of information or channel used.

Second, in order to enable sufficient feedback and establish an enhanced two-way communication, it is recommended that VG implement a standardized way of providing feedback on the volume data communicated via EDI and supplier webcast. For example, after each supplier webcast the viewers could be encouraged to respond to a short survey concerning the communicated volume data. An increased amount of feedback will help VG determine whether or not the suppliers have received and correctly understood the message, and enable the company to ensure that the suppliers are able to respond to demand. Moreover, it is suggested to provide more detailed statistics of how the supplier webcast is used, including e.g. who has watched it and who has not. This will allow VG to evaluate the message's effectiveness and adjust it if necessary.

Third, to increase the number of suppliers who utilize the forecasted volume data communicated via EDI, multiple actions are suggested in order to increase the number of suppliers who consider the full 12 months forecasts when planning their operations. First, VG must implement a more convenient way for the suppliers to be acknowledged of when new data is available in EDI. It is suggested for this to be conducted through the use of emails and/or push notices, inviting the suppliers to take part of updated volumes. Further, the degree of explanation of the forecasted volumes must be increased. To do so, VG is recommended to use an additional channel that allows feedback to communicate explanatory information concerning the forecasts in order to increase the suppliers' understanding. This could be conducted through the use of face-to-face or skype meetings held by each suppliers' supplier host, or through the use of webinars, which allows a larger audience. Moreover, VG must address the issue of not all suppliers being able to see the full 12 months forecasts. This seems to be a result of incorrect settings of the EDI at the supplier side. It is suggested that VG investigates this further, and take corrective actions accordingly, for example by providing

help with the settings to the suppliers who need it. Finally, the low degree of accuracy of the forecasted volumes is detrimental for the level of suppliers utilizing the forecasted volumes, why VG must address this issue. However, how the accuracy could be increased is not covered by this study, and must be separately investigated by VG.

Fourth, in order to establish a common knowledge throughout the company about what can and cannot be communicated and enhance the supplier hosts' background knowledge about the volume data, it is recommended that VG provides clear guidelines of what kind of information is classified and what is not and increases the information sharing within the company. By ensuring that everyone involved in the supplier volume communication is aware of what can and cannot be communicated, VG will be able to respond to the suppliers' demand for more information about the volume data. Closing the currently existing knowledge gap will further enhance a higher degree of explanation about the forecasted volumes in EDI, as requested from the suppliers mentioned in the chapter above. How the enhanced information sharing internally within VG should be conducted is not within the scope of this study, and need to be further investigated by VG.

Fifth, in order to ensure that the correct receiver is reached it is recommended that VG changes the way the contact details to the suppliers are managed. It is suggested that VG uses a solution that enables the suppliers to manage their own contact details themselves, in order to make sure that they are constantly up to date. By this, it will be the suppliers' responsibility to make sure that they receive the information. Additionally, in order to avoid the organizational barrier occurring today, VG is recommended to send information, e.g. the invitations to the supplier webcasts, directly to all intended receivers, instead of relying on that a few people within each supplying company will forward it to the rest of the affected parties.

Last, in order to update the channels, VG is recommended to focus on an increased degree of mobility and user-friendliness in the communication channels used in the supplier volume communication. This in order to respond to the demand of a higher level of mobility and user-friendliness, expressed both internally by employees and externally by the suppliers. Hence, it is suggested that VG examines the possibilities of developing an app that could be reached from smartphones and tablets in order to enhance the accessibility of the volume data. However, adding channels could increase the complexity, which impacts the structure of the interface toward the suppliers. It is thus suggested that the app should respond to a mobile version of the existing Supplier Portal. Further, it can be argued that a new solution needs to add value to the users in order to ensure commitment. An app could help improve the supplier volume communication of VG by enabling some of the solutions mentioned above. For example, it could provide a quick and easy way to provide feedback on the communicated volume data, enable push notices directly to smartphones and tablets when new forecasts are available in EDI, and facilitate the management of contact details by eliminating the need for manually handled contact details. By including these solutions in the app, added value and user commitment will be ensured. As a last remark, when developing new solutions, it is important to ensure compatibility with the existing channels. When investigating the

possibilities of enabling the supplier webcast in a mobile environment, it turned out that the company that provides the streaming service offers this opportunity. Yet, in order to ensure the required level of security, the viewer must first login into the Supplier Portal. While the current version of the platform does not allow mobile access, the soon-to-be-launched update of the portal will, why communication of volume data on mobile devices is considered to be a feasible action. In figure 6.1 below, the identified areas of improvement, the recommendations, and the intended result are summarized.

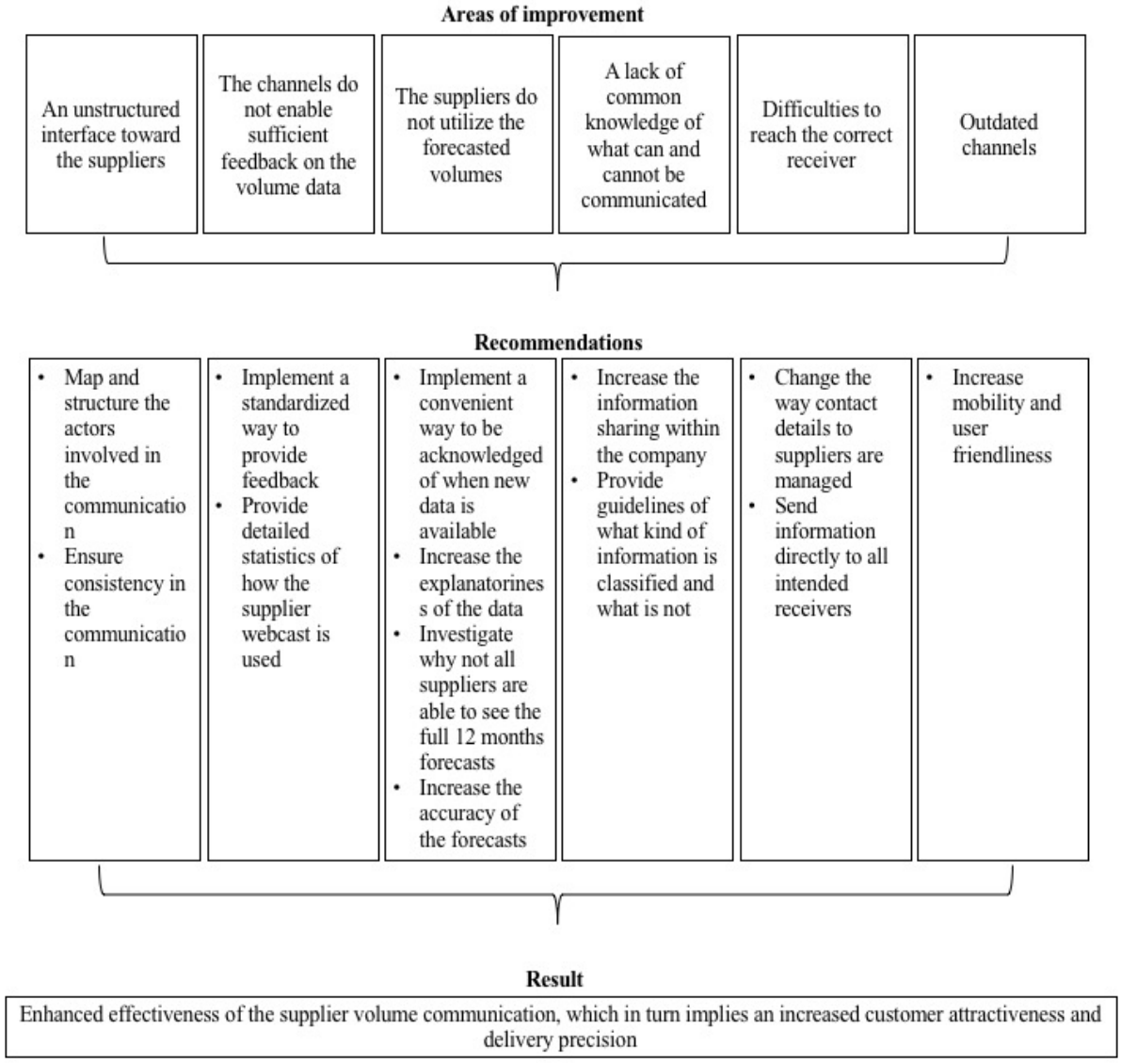

Figure 6.1: Areas of improvement, recommendations, and intended result

7 Discussion and Conclusion

The purpose of this study was to create recommendations of how the supplier volume communication at VG can be improved in order to position the company as an attractive customer toward the suppliers and increase the delivery precision. From data collected through both interviews and a survey, the following six areas of improvement have been identified; an unstructured interface toward the suppliers, the channels do not enable sufficient feedback, the suppliers do not utilize the forecasted volumes, a lack of common knowledge of what can and cannot be communicated, difficulties to reach the correct receiver, and outdated channels.

In order to improve these areas, VG is recommended to take certain actions. To begin with, it is suggested that the company reduces the number of actors who communicate with the suppliers, and ensures consistency in the communicated volume data independent of source of information or channel used. Further, VG is recommended to implement a standardized way of providing feedback on the volume data communicated via EDI and supplier webcast. It is moreover suggested that VG implements a convenient way for the suppliers to be acknowledged of when new forecasts are available in EDI, increases the degree of explanation of the forecasted volumes, ensures that all suppliers are able to see the full 12 months forecasts, and increases the accuracy of the forecasted volumes. The latter recommendation, concerning an increase of the accuracy of the forecasted volumes, requires further investigation prior to implementation. It is outside the scope of this study to investigate how such an increase in accuracy can be obtained, and it is recommended that this is carefully examined in order to enable VG to proceed with this recommendation. Further, VG is recommended to increase the information sharing within the company and provide guidelines for what can and cannot be communicated. Concerning the increased information sharing, also this recommendation needs further investigation prior to implementation. How the increase in information sharing should be conducted in a suitable way is outside the scope of this study, why the internal ways of communicating and internal knowledge sharing is advocated to be assessed in order to find an effective way to close the internal knowledge gap and establish a common knowledge of what can and cannot be communicated to the suppliers of VG. Finally, VG is recommended to change the way the contact details to the suppliers are managed, and increase mobility and user-friendliness in the channels used within the supplier volume communication. These recommendations are expected to enhance the effectiveness of the supplier volume communication of VG and thus contribute to an increased customer attractiveness and an increased delivery precision, which responds to the purpose of this study.

For VG to proceed with the recommendations, it is suggested to appoint a task force with the assignment to create an action plan. The employees included in the task force have to be familiar with the supplier volume communication of VG. When constructing the action plan the task force must prioritize between the recommendations, which can be made according to the criticality of the areas of improvement and the resource required to enact the recommendations. In this study, the low degree of accuracy of the forecasted volumes

constitutes the most frequently expressed issue, both internally among the interviewed employees and externally among the suppliers responding to the survey. Thus, it is recommended that VG prioritizes to improve this area of improvement in the work of enhancing the supplier volume communication.

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Appendices

Appendix A - Interview Templates

Template used for identification of current supplier volume communication
Questions concerning sender/receiver:

- Which actors are sending information?
- Which actors are receiving information?
- Which actors are directly affected by the information?
- Which actors are indirectly affected by the information?

Questions concerning channel:

- Which channels are used for sending messages?
- Which channels are used between which actors?

Questions concerning message:

- What types of messages are sent?
- What types of messages are sent through which channels?

Questions concerning feedback:

- How does the provision of feedback occur?

Template used for identification of areas of improvement
General questions:

- What role do you hold within your division?
- For how long have you worked in this role?
- How is your role connected to the supplier volume communication?
- Are you in direct contact with the suppliers?

Questions concerning the current supplier communication:

- Since 2017 Volvo Group has experienced a stressed supplier situation not being able to cope with volumes, what role do you believe supplier volume communication has in this?
- How do you think the current supplier volume communication is working?
- Do you experience any problems with the current supplier volume communication?
- Do you believe that the current channels used for supplier volume communication are sufficient for its purpose?
- Do you believe that the messages communicated are properly constructed for the intended purpose?
- Do you believe that the supplier volume communication enables provision of sufficient feedback?
- How do you perceive the suppliers' responsiveness to the volume communication?

Questions concerning future supplier communication:

- What can your division do to help improve the supplier volume communication?
- What can other divisions at VG do to help improve the supplier volume communication?
- What is your vision for Volvo Group's supplier volume communication?

Template used for identification of trends within external business communication solutions

- What are the most important features for external business communication solutions?
- What type of external business communication solutions are used within manufacturing today?
- What trends do you see within external business communication solutions?
- How could the discussed solutions be applied to a company such as the Volvo Group?
- How can the discussed solutions be added to an existing solution of supplier volume communication?

Appendix B - Survey Template

Q1. How satisfied are you with the following communication channels that the Volvo Group uses today for communicating volume data? (With your host buyer)

	Very dissatisfied	Dissatisfied	Satisfied	Very satisfied	N/A
EDI (Delivery schedules)					
Supplier webcast					
Business Review Meeting					
Face-to-face meeting					
Skype meeting					
Email					
Phone call					

We welcome you to elaborate on your answer:

Q2. What existing or new channels would you prefer to use in the communication concerning volumes with the Volvo Group?

Q3. How satisfied are you with the volume data you receive from the Volvo Group?

Very dissatisfied ○ Dissatisfied ○ Satisfied ○ Very satisfied ○ N/A ○

We welcome you to elaborate on your answer:

Q4. Do you receive sufficient volume data from the Volvo Group to be able to perform in an optimal way?

○ Yes

○ No

We welcome you to elaborate on your answer:

Q5. Today, the Volvo Group uses EDI to communicate confirmed orders and forecasted volumes for 12 months. How far in the long-term forecast do you look when you plan your operations?

- ○ 1-4 months
- ○ 1-8 months
- ○ 1-12 months
- ○ N/A

If the answer is less than 1-12 months:

Q6. What is the reason for you not utilizing the full 12 months forecasts when planning your operations?

- ○ I find it time-consuming to look for the full 12 months forecasts
- ○ I do not trust the forecasted volume data
- ○ I do not find the data explanatory enough
- ○ Other, please specify:

Q7. Are you able to provide sufficient feedback on whether you can/cannot deliver according to the volume data you receive from the Volvo Group?

- ○ Yes
- ○ No

If no, we welcome you to elaborate on your answer:

Q8. How would you prefer to provide feedback on the volume data that you receive from the Volvo Group?

Q9. Concerning the Volvo Group's future volume communication, what new functionalities would you like us to consider?

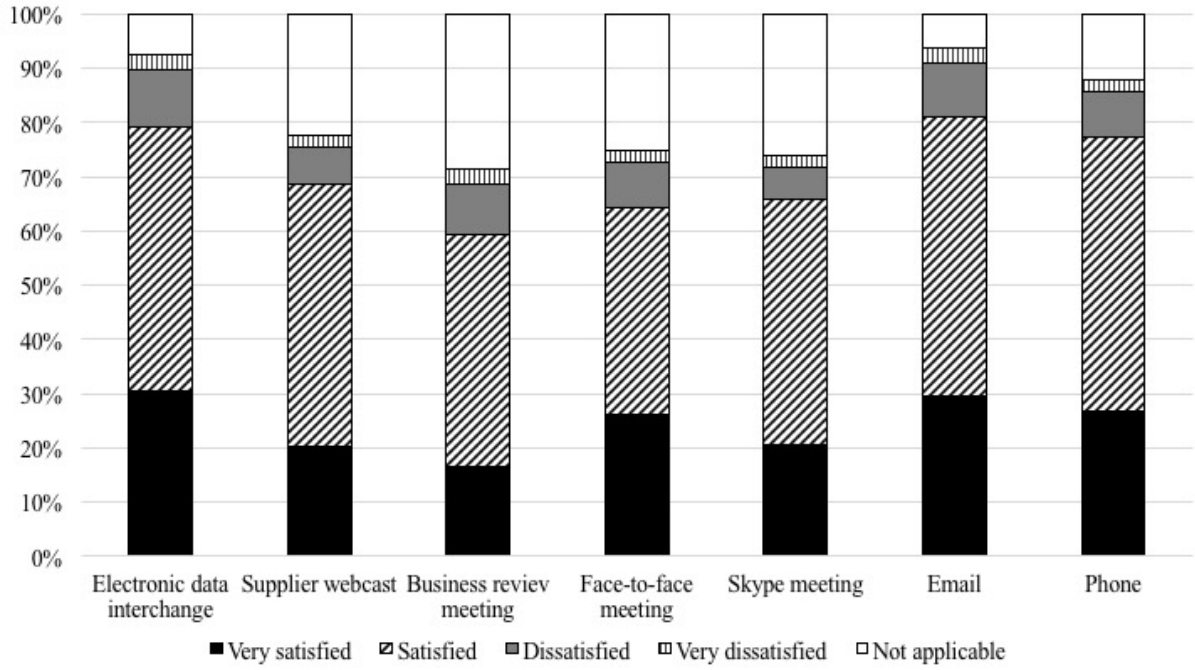
- ○ An app where I can access the volume data from my smartphone/tablet
- ○ Notifications when new volume data is available
- ○ A quick and easy way to provide feedback on the received volume data
- ○ Other, please specify:

Q10. Compared to other companies, how can the Volvo Group improve the volume data communication (in all perspectives)?

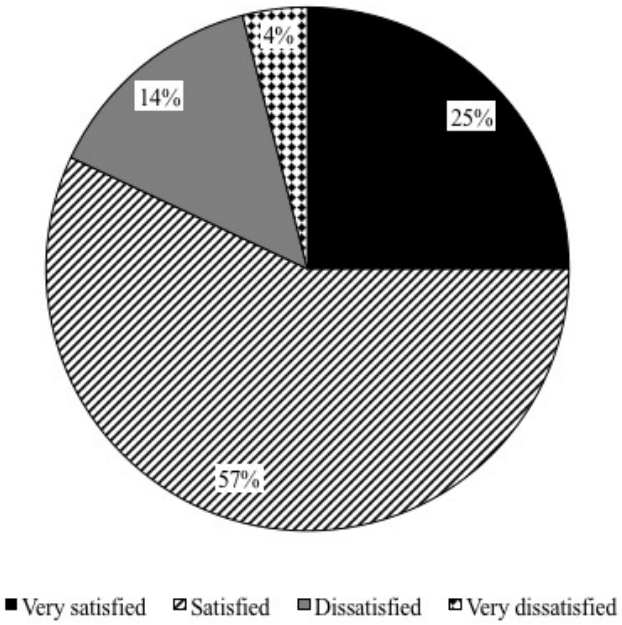
Q11. Thank you for your contribution! If you have any additional thoughts on communication or this survey, we welcome you to share these with us:

Appendix C - Result of Survey

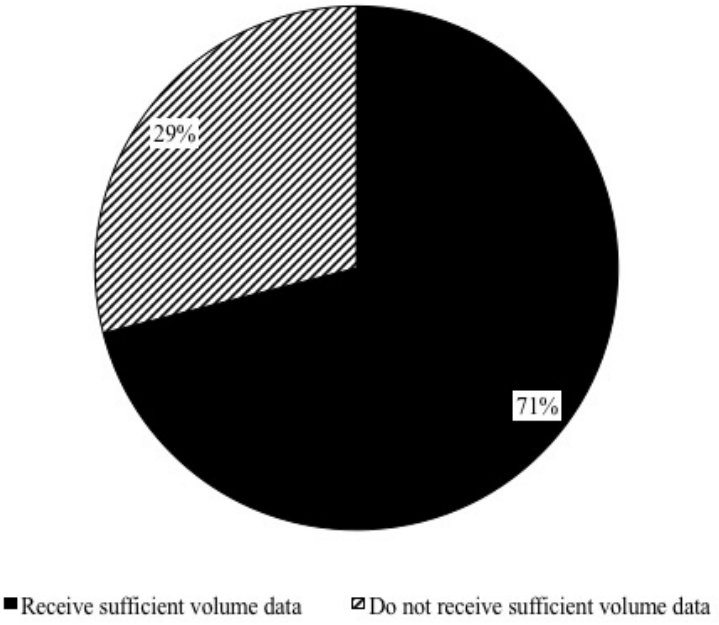
Q1. How satisfied are you with the following communication channels that the Volvo Group uses today for communicating volume data?



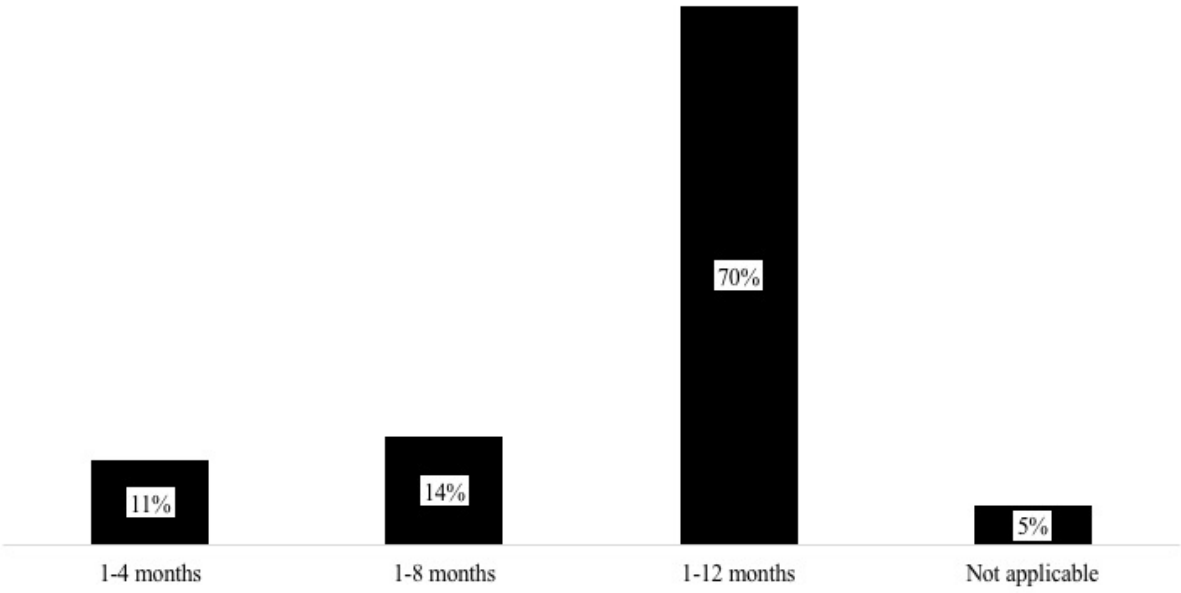
Q3. How satisfied are you with the volume data you receive from the Volvo Group?



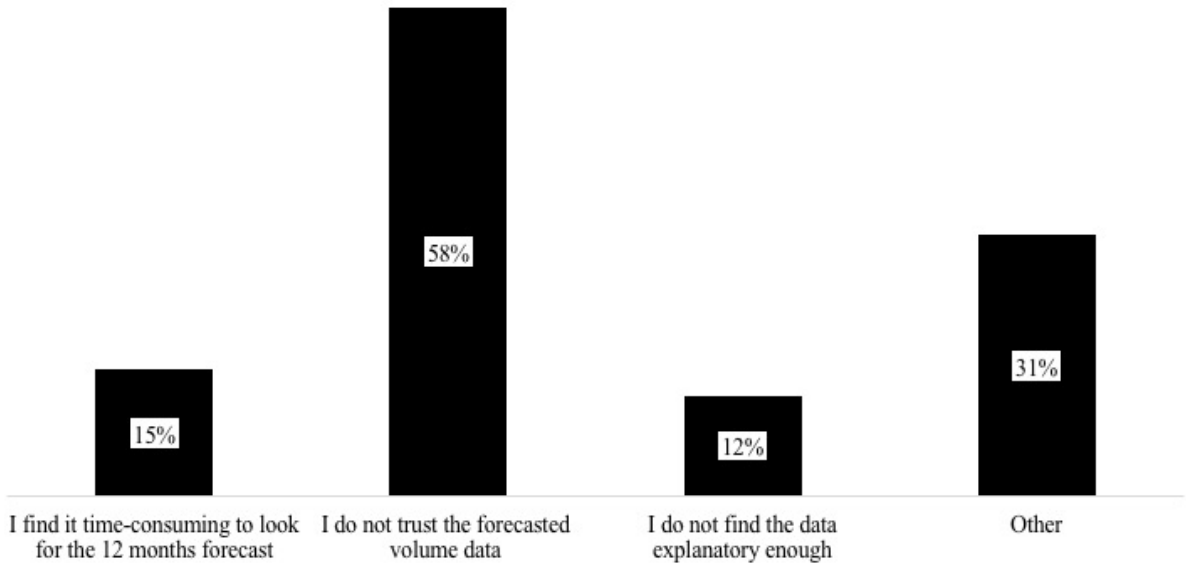
Q4. Do you receive sufficient volume data from the Volvo Group to be able to perform in an optimal way?



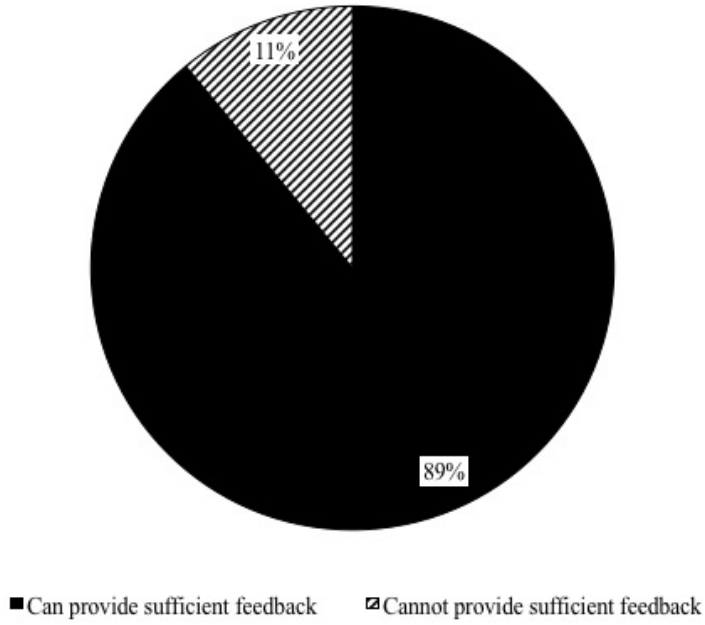
Q5. Today, the Volvo Group use EDI to communicate confirmed orders and forecasted volumes for 12 months. How far in the long-term forecast do you look when you plan your operations?



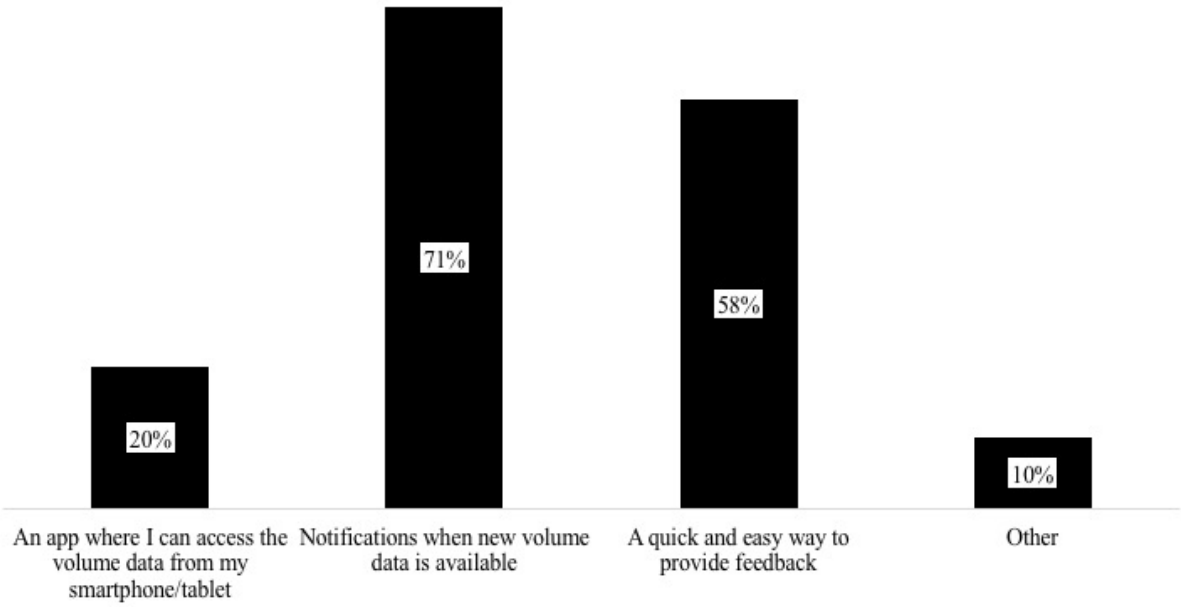
Q6. What is the reason for you not utilizing the full 12 months forecasts when planning your operations?



Q7. Are you able to provide sufficient feedback on whether you can/cannot deliver according to the volume data you receive from the Volvo Group?



Q9. Concerning the Volvo Group's future volume communication, what new functionalities would you like us to consider?


20%
71%
58%
10%
An app where I can access the volume data from my smartphone/tablet
Notifications when new volume data is available
A quick and easy way to provide feedback
Other