

Customer Value Driven Continuous Improvements in Sales and Services

- Introducing the Customer Value Assessment Method (CVAM)

Joakim Olsson & Magnus Flodberg

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the Customer Value Assessment Method (CVAM)

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Abstract

Title: Customer Value Driven Continuous Improvements in Sales and Service - Introducing the Customer Value Assessment Method (CVAM)

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Problematization: Carlson Wholesale System (CWS) is a system for working with continuous improvements in sales and service processes, developed with inspiration from the Toyota Production System and Carlson's own Carlson Manufacturing System (CMS). CWS has the core objective of adding customer value by increasing efficiency to better meet customer needs. Carlson in Argentina began to implement CWS during 2010 but have had difficulties in clarifying for managers and employees the customer value that is created from working with CWS.

The problem is believed to be that customer needs and wants are not systematically integrated into the improvement work under CWS. As a result, it has been difficult for people within the organization to assess whether the output from CWS is customer value driven. The proposed solution in the thesis at hand is to develop a method that enables customer value driven continuous improvement through a systematic integration of the customer's value perception into CWS.

Research questions: To guide choices of literature and empirical studies from a research perspective, three research questions were formulated:

- What dimensions, aspects and tools should be part of a practical method that enables customer value driven continuous improvements in sales and service?
- How should customer value be defined in a continuous improvement context to fit the method?

- How should the method be designed?

Purpose:	The purpose of the thesis is to develop a method for systematic integration of the customer's value perception into the continuous improvement work, to enable customer value driven continuous improvements of sales and service processes at Carlson Argentina S.A..
Methodology:	The master thesis is a qualitative case study performed at Carlson in Argentina that is descriptive and evaluative. Primary data was collected through unstructured and semi-structured interviews as well as through participant- and direct-observation.
Conclusions:	The report introduces the Customer Value Assessment Method (CVAM) – a practical method for integrating the customer's value perception in continuous improvements in sales and service processes. The overall win of using the method is that it enables customer value driven continuous improvements in sales and service processes. CVAM provides a practical contribution to Carlson's work with CWS but is also of theoretical relevance in the academic fields of continuous improvement and customer value.
Delimitations:	The case study object is CWS, which is aimed at continuously improving sales and service processes, which is why the sales and service part of Carlson is targeted for research. The literature review is limited to frameworks on continuous improvement and customer value, without respect for the organizational challenges in implementing and managing change. <i>Continuous improvement</i> is the term commonly used for the frameworks lean and Six Sigma, which excludes other terms in these frameworks that are believed to not be suitable for sales and service processes.
Keywords:	CVAM, customer value driven continuous improvement, customer value, continuous improvements, lean, Six Sigma

Preface

Months, weeks, days, hours, minutes and seconds spent on learning about customer value driven continuous improvements have resulted in the academic report that you are reading as of now. The rewarding process of meeting interesting people, studying complex phenomena, and solving problems that create value for others has been possible with the help from a number of individuals and teams. These people deserve acknowledgements and our greatest gratitude.

First of all we would like to thank the project team in Argentina and all other supporters along the way, based in Sweden, Argentina and Brazil.

We would also like to thank our supervisors at Lund University: Bertil Nilsson at the Faculty of Engineering and Fredrik Häglund at the School of Economics and Management.

Lastly, the authors would like to thank each other for a great time together, during which we have learned a lot and at the same time have had much fun.

Lund, June 1st, 2011

Magnus Flodberg & Joakim Olsson

Definitions

Business Unit (BU): The BU is herein the Carlson Argentina S.A. national headquarters in Buenos Aires. Carlson's owned national head offices are called BU's, and are the national distributor of Carlson's products and spare parts to the dealers in a country.

Customer Value Assessment Method (CVAM): The method developed by Flodberg & Olsson as a result of the master thesis project, with the aim of enabling customer value driven continuous improvement in sales and service processes.

Sales processes: Processes related to sales of Carlson's products.

Carlson Manufacturing System (CMS): Carlson's own version of Toyota Production System, dedicated to improvements of processes in manufacturing.

Carlson Wholesale System (CWS): A system inspired by Carlson Manufacturing System (CMS) and before that, Toyota Production System (TPS), dedicated to continuous improvement in sales and service business operations.

Service processes: Processes related to providing product owners with services in repair, maintenance and e.g. product training.

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1 Introduction

The first chapter of the master thesis is meant to provide the reader with an introduction to the research case and problem. An initial wide discussion about the problem leads to the specification of the purpose and questions of the research.

1.1 Background

Ever since Toyota started developing their production philosophy Toyota Production System (TPS), it has yielded many imitations, alterations and branches for other industries, companies and sectors (Liker, 2004). Carlson (altered alias due to confidentiality), a leading industrial manufacturer, is one of the production companies inspired by Toyota and their TPS and developed their own version, called the Carlson Manufacturing System (CMS). CMS is a well-established way of working in order to continuously improve the company's processes in production. It is described as "A powerful instrument for increasing productivity", in terms of e.g. producing more product units per employee. (Carlson, n.d, 6)

After the successful launch and implementation of CMS, a similar way of working with process improvements was developed for retail (sales and service processes), called the Carlson Wholesale System (CWS). CWS is described as "A systematic way of working in order to improve efficiency and services to customers" (Carlson, n.d, 6). The work with implementing CWS throughout the sales and service network began during 2006 and CWS has until today been implemented in a number of markets around the world. Thus, CWS is new to large parts of the sales and service organization around the world. In Argentina, Carlson started implementing CWS in 2010. Until today people from the organization at the national headquarters (Business Unit) in Buenos Aires and two dealers in Cordoba and Buenos Aires have taken part in CWS training workshops, and are gradually starting to work according to the CWS. (CWS-Coordinator, CAR, 2011)

According to Carlson, *CWS has the goal of customer value driven output.* (CWS-Coordinator, CAR, 2011) An issue raised by managers at various levels in Argentina and participating employees at CWS trainings, is that the customers' benefits from working with continuous improvements of sales and service in line with CWS, are difficult to assess and measure. As a result, it is also a challenge to convince employees at all levels that their efforts within CWS truly add value to the customer. For this reason, Carlson Argentina S.A. expressed a specific interest in *investigating the linkage between customer value and CWS.* More specifically: how can the linkage be clarified when working with CWS?

The issue was raised by management in Argentina in November 2010, and became the initial starting point for this master thesis. Hence, Carlson Wholesale System and mainly its application in Argentina, is subject for the case study of this thesis.

1.2 Problematization

What was then the actual problem behind the unclear linkage between customer value and continuous improvement? Was there something about the customer value aspect missing in the way of working with continuous improvements in line with CWS?

After studying literature on continuous improvements and customer value, performing initial interviews with representatives from Carlson in Sweden and discussions with top management in Argentina, the issue could be specified further. The problem was believed to be that customer needs and wants were not systematically integrated into the improvement work under CWS. As a result, it had been difficult for people within the organization to assess whether the output from CWS is customer value driven. Doubts were based on that improvements had been performed mainly from what the organization *thinks* the customers want, but not what the customers *say* they want (read: customer value as defined by the customer). The identification of this gap, or issue, made the authors believe that the problem with an unclear linkage between customer value and CWS was therefore due to the lack of a systematic method for integrating the customer's value perception into CWS. This problem was discussed with parties involved with CWS in Argentina, which ended in the suggestion for the master thesis to develop a method to continuously integrate the customers' value perception into CWS.

Why develop such a method? The answer is that Carlson wanted a practical way of clarifying how working with continuous improvements in sales and services creates customer value. But there is also a theoretical relevance in the issue. Lean, being a great inspiration to CWS and one of the main frameworks that idealize continuous improvements, has the core objective to provide customer value. However, lean has received criticism about focusing too much on improving the "shop-floor", and too little on value as defined by the customer. (Hines et al. 2004) Hammer (2001) states that many companies have stripped down their businesses to a "lean and mean"-state by eliminating non-value-adding work and improved efficiency internally. What remains is to reduce waste at the company's boundaries, as defined by customers and suppliers. The issue of focusing too little on the value as defined by the customer when working with continuous improvement appears to be similar to Carlson's situation with CWS.

Hines et al. (2004), emphasize that the focus on customers in continuous improvements should be enabled by so-called value systems, uniquely created for different industries, sectors and companies. These value systems should be designed to use tools from various management approaches such as lean manufacturing, Six Sigma and marketing. With this in mind, the central issue of the thesis, being to develop a method that clarifies customer value driven output when working with CWS, suggests that the method could represent a value system uniquely designed

for Carlson. Additional issues arise: What tools from management approaches should be built into the method and in what ways? How should the design of the method look like? With the knowledge that CWS is meant for sales and service processes; how should customer value be defined in the context of continuous improvement of sales and services for integration in the method?

These issues are the basis for the research and are further specified below in research questions and the purpose of the master thesis. The result of the research is called the Customer Value Assessment Method (CVAM), a method designed for Carlson that is believed to enable customer value driven continuous improvements in sales and service processes. A presentation of CVAM is found in Chapter 6.

1.3 Research questions

To guide choices of literature and empirical studies from a research perspective, three research questions were formulated:

- What dimensions, aspects and tools should be part of a practical method that enables customer value driven continuous improvements in sales and service?
- How should customer value be defined in the continuous improvement context to fit the method?
- How should the method be designed?

1.4 Purpose

The purpose of the thesis is to *develop a method for systematic integration of the customer's value perception into the continuous improvement work*, to enable customer value driven continuous improvements of sales and service processes at Carlson Argentina S.A..

1.5 Delimitations

Carlson operates in the heavy manufacturing industry with an extensive range of complementary products. Aside these products they provide services such as workshop services, spare parts, financing and insurance worldwide. Since the case study object is CWS, which is aimed at continuously improving sales and service processes, the sales and service part of the organization is targeted for research. Some conversations were made with Swedish representatives of Carlson, but the main object of study is Carlson Argentina S.A. and its customers.

The theoretical foundation is restricted to literature on continuous improvement and customer value, due to the purpose of the thesis. This approach implies that the organizational difficulties and response to change, for example when implementing

new ways of working, are not treated. This delimitation is however discussed as a limitation to the research in Chapter 7.

The term *continuous improvement* is used as the main issue throughout the report when referencing frameworks in the areas of lean and Six Sigma. These frameworks emphasize to work with a number of methodologies and techniques that are not all described in this report due to their inaptness for sales and service operations. However, the methodologies that are described do have all specific relevance to continuous improvement.

1.6 Research contribution and target group

The target group for the research is first and foremost a set of stakeholders from Carlson, who have received a suggestion of how to work with continuous improvements in a customer value driven way. CVAM is aimed to be a complementary method to the existing work under CWS. The company receives a new dimension to their philosophy of developing the business.

CMS and CWS play important parts in Carlson's success story. Employees at all levels as well as suppliers have been involved in the work with CMS and CWS. What is still missing is a systematical integration of the customer's voice in the continuous improvement work under CWS. Some initiatives have been taken in Europe, but they have remained local and no best practice has yet been established. The master thesis project at hand aims at contributing to fill this gap by introducing a methodology for integrating the customer into CWS, with Carlson Argentina as subject for case studies.

In the academic world there is a rising topic about working with lean and other quality philosophies in customer driven ways and both in production and service, why the research should be of interest among academics as well. The development of a method to integrate the customer value perception in continuous improvement would add a contribution to contemporary research in the area, to be used in further research and as inspiration in other service organizations.

1.7 Readers' guidelines

To grasp the full essence and validity of the research, it is necessary to read the report from start to finish. However, to merely learn about the results of the research and how customer value driven continuous improvement is possible, it is recommended to read the Chapters 1., 2.2, 2.3, 4., 5. and 6. A short overview of the report's chapters is described below.

Chapter 1. – Introduction to the problems in practice and theory about the integration of the customer into the work with continuous improvements, in line with CWS.

Chapter 2. – Description of the author's methodological process to handle the research questions. Furthermore, a detailed description of the execution of the research is presented.

Chapter 3. – Description to the theoretical foundation that supports arguments and analysis of the research.

Chapter 4. – Case study description of Carlson and its philosophy, and presentation of empirical findings from interviews.

Chapter 5. – Analysis of empirical data with support from theory in order to investigate the research questions.

Chapter 6. – Demonstrating presentation of results of the research, the CVAM-method that enables customer value driven continuous improvement.

Chapter 7. – Discussion of the CVAM-method's theoretical and practical implications, limitations and suggestions for further research.

2 Research Methodology

The chapter is a description of the used methodology when performing the research. First, the research approach is described, followed by a discussion of the truthfulness of the research. Lastly, the practical plan and execution of the research are described.

2.1 Research approach

The master thesis at hand is as a qualitative case study of Carlson Wholesale System that is descriptive and evaluative. These choices are motivated in the next Chapters.

2.1.1 A qualitative case study

The purpose of the thesis was to develop a methodology for customer value driven continuous improvement by using the case of CWS, considered to be best investigated with a set of research questions, to answer by empirical and theory studies. Furthermore, the research questions imply a descriptive and evaluative study that was thought to be best investigated through interviews. Bryman and Bell (2007) indicate most of these characteristics as the main steps in qualitative research. As Yin (2003) puts it, a case study is needed when a research question cannot be answered solely by using experiments, a survey or history. Answers to the research questions in this thesis were believed to require more data than could be collected through the above methods, which is why the case study approach was believed to be appropriate. Hence, the definition of the thesis as a qualitative case study is reasonable.

The thesis describes the case of CWS and the development of the CVAM-method that complements CWS in order to work with continuous improvements in a more customer value driven way. The developed method CVAM was subject to testing followed by an evaluation of the tests that is presented in the end of Chapter 5. In this way it is a descriptive evaluative case study (Yin, 2003).

As there is plenty of research on both continuous improvement and customer value, the initial review of existing theory was favorable as well as qualitative collection of empirical data from the case that together build the foundation for the CVAM method. After and during the collection of empirical data, the theoretical framework was extended and revised due to new findings.

2.1.2 Case study design

Yin (2003) states that the research design is crucial to create viable evidence. Four problems need to be dealt with: definition of research questions, determine relevant data, decide on what data to collect and lastly how to analyze the results. The below

sections describe how the authors dealt with these problems. The two last sections of the methodology chapter describe in practical detail the plan and execution of the research.

2.1.2.1 Research questions

In line with the chosen case study approach as described by Yin (2003), the research questions were formulated as “how” and “what” questions. The questions were aimed at directing the research results towards describing how the method to enable customer value driven continuous improvement would work in practice. These questions were not set from the beginning, but after an initial literature review and discussions with involved parties at Carlson. This is a method used by experienced investigators to develop sharp and insightful research questions about a topic (Yin, 2003).

2.1.2.2 Secondary data

The choice of literature was primarily based on the research questions and purpose of the thesis. Since the case was Carlson and its philosophies on continuous improvement, literature on lean and other similar practices was chosen for review. Whereas the initial purpose of the project was to investigate the linkage between customer value and continuous improvement, possible literature on customer value was discussed with tutors and searched for via electronic databases.

Lund University’s own database “LibHub” was used to search articles. Combining the two terms “continuous improvement” and “customer value” generated 78 search results. The two combinations of “lean” and “Six Sigma” with “customer value” generated 96 and 33 search results respectively. The search engine Google was used to find additional literature with the same search term combinations as above.

The selection of literature on customer value was chosen on the basis of its adaptability to literature on continuous improvement. The literature review also aided the design of interview questionnaires.

Data for describing the background of the case of Carlson was collected via the company’s webpage.

2.1.2.3 Primary data

Primary data was collected mainly from interviews as commonly made in qualitative studies (Bryman & Bell, 2007). However, the authors were also able to learn about the case through direct and participant observation that are additional sources of evidence in case studies (Yin, 2003).

Interviews were held with representatives from three different groups of stakeholders of the case. These groups were people at Carlson in Sweden involved in CWS, people at Carlson Argentina S.A. who would describe the case study object,

and Carlson's customers. The groups were selected to provide insights on the case of Carlson (Carlson people) and to provide data, in order to answer the research questions (customers and Carlson people).

Interviews with Carlson people in Sweden involved in CWS were unstructured interviews to learn about the case of CWS, as were some interviews with people at Carlson Argentina to learn about the company's business. Unstructured interviews are very similar to conversations where there might be just one single question (Bryman & Bell, 2007). The questions asked to these interviewees were based on notions on customer value and its linkage to continuous improvements in order to find out how Carlson worked with the issue at that time. Interviews with people from Carlson Sweden were performed via telephone and lasted approximately thirty minutes each. Additional questions were asked via e-mail. Interviews with the Carlson Argentina representatives at the headquarters (BU) were performed face-to-face during approximately one hour each.

Carlson emphasized that to learn fully about the dimensions of CWS, it would be appropriate for the authors to attend an CWS-training session. During three days of training the authors participated together with approximately twenty employees at a dealer and thereby learned the practice of CWS. Yin describes this type of data collection as "Participant-Observation" (2003, pp. 93-94), where the observer participates in events being studied. Criticism about the risk of creating a biased perception of the studied case is avoided by not using more data from the CWS-training than could be verified by other sources.

Interviews with dealer representatives and customers were of a semi-structured nature. Bryman and Bell (2007) describe semi-structured interviews as following a structured set of questions, but not necessarily staying at a preset plan to allow flexibility towards insights that were not expected by the researchers. Questions were formulated with basis on literature and previous interviews. The interviews with dealer representatives lasted approximately one hour each, with six interviewees in total. They were asked to communicate what they thought should be improved in Carlson's sales and service processes and why. Then a guide of existing processes was used to specify the interviewees' suggestions and thoughts. The interviews were performed in the dealer representatives' offices. These interviews were recorded on a mobile telephone and later listened to, to provide an unbiased interpretation (Bryman & Bell, 2007).

Customers were interviewed in a similar way as the dealer representatives. Eleven (11) customers were interviewed for approximately fifteen to twenty minutes each where they were asked what they thought Carlson could improve in its sales and service processes from the customers' perspectives and why. The customers were invited when they were visiting the dealer for regular errands. A guide of specified processes were used if the customer could not speak freely about specific

improvements that were desired. The authors' intention was to let the customers have an open mind to be able to identify past experiences that did not correspond to the customers' expectations.

During the development of the CVAM-method it was subject to testing at a dealer. The authors used the method of "Direct-observation", as described by Yin (2003, pp. 92-93). CVAM was tested in its early forms for two weeks, and directly observed by the authors in meetings and other settings at the dealer. This process is explained in the last section of this chapter, Research Execution.

2.1.2.4 Analysis

The analysis of this report was performed at multiple levels, and iteratively during the research process. With support from literature and interviews with stakeholders at Carlson, a descriptive analytic process was executed. By studying literature and data from interviews and participant-observation, the description of the definition for customer value in a continuous improvement context was possible. This definition laid the foundation for the development of CVAM. With basis in both literature and data from the case study, a requirement specification for the contents of the CVAM could be set up. Ultimately, testing of CVAM at a dealer and an evaluation of these tests allowed the analysis and conclusions of how CVAM should be developed further and used in practice. A thorough description of the analytical approach is made as an introduction to Chapter 5.

2.2 Validity and reliability

There is not one approach to the truthfulness of evidence from qualitative research. Yin (2003) mentions four elements to consider when designing case studies. The first, construct validity, refers to the validity of collected data. Ways to ensure that data is valid are to use multiple sources, establish a chain of evidence and ask for validation of data from key informants. Secondly, internal validity is only applicable to causal or explanatory studies to ensure that event x led to event y. Since the master thesis at hand is descriptive and evaluative this dimension is not relevant. Thirdly, external validity refers to the extent a case study can be generalized. Lastly, reliability is the ability of another researcher to perform the same study as reported and arrive at the same findings. (Yin, 2003)

To begin with, the validity and reliability of the master thesis is under all criticism due to the necessity of using an altered alias for the case company. However, to ensure some construct validity, multiple sources were used when collecting data, both from within Carlson and outside, and in different settings such as interviews, participant observation and direct observation. The collected data from Carlson people was sent to them for validation, however data from customers was not sent for validation to not inconvenience them, which may have negative influence on the construct validity.

The master thesis extends theory on how to work with continuous improvement with the integration of the customer's voice and value perception, which is a popular topic among researchers. Furthermore, companies are starting to work more and more with continuous improvement in sales and service processes, which is similar to the case study and why the results of the thesis may be used in similar settings. In this way, the report deals with external validity. Lastly, reliability is handled by defining a detailed description of the research plan and research execution in the following chapter. With the same purpose and the same case, another researcher would most probably develop a similar method as the CVAM. However, with a different case, the result might be slightly different because of organizations' varying characteristics. This interferes with the reliability of the study.

The following section accounts for the research approach in its practical context, carefully described in plan and execution.

2.3 Research plan

Discussions started in November 2010 between the authors of the thesis and Carlson Argentina S.A. about a possible research project. Carlson had already started working with the introduction of CWS at some levels of the organization. However, they were concerned about the linkage between CWS and customer value. The thesis project was formulated in cooperation between the two parties to investigate this linkage and develop a method to enable customer value driven output from working with CWS.

With a project at hand, the research plan was laid out together with Carlson Argentina. This plan is best explained in bullet points divided into three research phases:

Case study

- Literature review of frameworks on continuous improvement and Customer Value
- Interviews with concerned Carlson people in Sweden
- Interviews at the Business Unit in Argentina to learn about the Carlson business
- Interviews with dealer representatives in Argentina
- Participation in training of CWS together with dealer representatives in Córdoba
- Further interviews with dealer representatives in Córdoba
- Interviews with end-customers about their perspective on customer value

Method development

- Analysis of interviews

- Development of method
- Testing of method at the dealer in Córdoba
- Analysis of testing
- Further development of method

Presentation

- Presentation of method at Business Unit in Argentina
- Presentation of method at Carlson headquarters in Sweden
- Completion of academic report and presentation at Lund University

2.4 Research execution

2.4.1 Case study

The literature review was performed in Sweden during January-February 2011. Frameworks in continuous improvement and customer value were studied closely that provided new insights of how they could be connected. These frameworks are described in Chapter 3. In the meantime telephone interviews were held with three representatives from Carlson in Sweden that were involved with customer interaction and CWS. The theme of study was also discussed with the Head of CWS in Brazil via e-mail, and the members of the project group in Argentina.

The authors arrived in Argentina and at the BU in Buenos Aires in mid-February. The visit at the BU was scheduled for two weeks and aimed at studying Carlson's sales and service business, exploring the available resources for the project, and preparing for the visit for four-five weeks to the dealer Dealer 3 in Córdoba. Interviews were held with the CWS-coordinator in Argentina who introduced the authors to the CWS work in Argentina, with a marketing specialist who explained existing national customer interaction activities, and with the service director with whom the research topic was discussed and elaborated.

Interviews were held with sales and service managers at the dealers Dealer 1, Dealer 2 and Dealer 3 (six people). The two first are in Buenos Aires and Dealer 3 is in Córdoba. These interviews were face-to-face in-depth interviews that lasted approximately one hour each. The interviews were designed to investigate what dealer representatives believed that the company should improve in its sales and service processes. The sales and service managers were seen as "internal" customers to the BU. The dealer representatives were simply asked what they thought should be improved from their point of view as internal customers. An earlier performed internal "dealer satisfaction" survey at Carlson Argentina S.A. was used as material to specify the processes in sales and service so that the sales and service managers could express their thoughts about each and every process. The results from these interviews are shown in Chapter 4.

The next event was to travel to Córdoba to participate in a CWS-training session and interview end-customers during a four-five week visit at the dealer Dealer 3. During the first week in March, the authors participated in the CWS-training for half of the dealer staff. This activity allowed the analysis of the work with CWS from an employee perspective, in order to investigate how to make it more customer value driven. During the second week in Córdoba, interview questions for the end-customers were developed together with the sales and service managers (two people) at the dealer Dealer 3. These were designed in a similar way as the interview questions to the dealer representatives, in the sense that the customers were asked to answer what processes Carlson should improve and why from the customer's perspective. This interview design was influenced by the studied literature and aimed at collecting data for treating the research questions of the master thesis. The questionnaire is found in Appendices, Chapter 8., and the results from the interviews are found in Chapter 4.

2.4.2 Method development

Analysis of the interviews performed provided insights about the gaps in the current work with CWS that the method should fill. Together with the studied literature the research questions could be treated, which laid the foundation for the development of the method. During this period the CVAM-method was developed in its early forms.

The early form of the CVAM-method was tested for two weeks at the Córdoba dealer, during the third and fourth week of the visit in mid-March. These tests were made with two developed tools that support the CVAM-method, which were used by people working with sales and service at the dealer. Approximately 20 people in total were involved in the tests. During the test period, the authors observed and interacted with the people that participated in the tests, which provided data for further analysis and development of the method. From testing the CVAM-method, the evaluation showed that some aspects of the method needed revising. In this phase the CVAM-method also received its final name. The tests are presented as the last part of Chapter 5.

2.4.3 Presentation

The CVAM-method was first presented to the Managing Director and Sales and Marketing Director live in Córdoba during the fifth week of the visit. They had the opportunity to feedback on the results from the research before presenting it to the whole national management group. The week after, the authors travelled back to Buenos Aires to present the completed groundwork of the CVAM-method to the national management group. It was presented before approximately 10 managers at different levels and the method received good feedback. On the 7th of April the authors returned to Sweden to complete the academic report and present the results at Carlson in Sweden and at Lund University in mid-May.

3 Theoretical framework

The chapter introduces the results from the performed literature review. Its design is directed to the investigation of the linkage between continuous improvements and customer value. First continuous improvement is described from different perspectives. Second, literature on customer value is treated. Lastly, theory on continuous improvement with focus on the customer is reviewed.

Remember that the literature review is delimited, as described in chapter 1.5, to primarily concern continuous improvement and customer value. Therefore, not all aspects, dimensions, and tools are mentioned below. Instead, focus is set on the aspects, dimensions and tools that were believed to be applicable to sales and service processes and have direct relevance to customer value. A motivation for this is that many tools in Lean and Six Sigma are designed for production processes.

3.1 Continuous improvement

3.1.1 Toyota Production System

TPS was developed by the Toyota Corporation between 1948 and 1975 and is shortly described a manufacturing philosophy consisting of a set of values and principles with the main objectives to eliminate waste and get rid of overburden and inconsistency, in production. This, with the overall purpose to enable establishment and continuous improvements of standardized, often large-scale, steadily running production processes with a minimum of inconsistency, that still are enough flexible so that the customer gets what he wants with smallest, possible level of overburden and waste arising.

The elimination of waste is by many seen as the most central part in TPS. Seven types of wastes, as listed below, are treated under TPS and the reduction of every one of them opens up for a possible production performance improvement. (Liker, 2004)

The seven categories of waste in production:

- *Over-production* – producing earlier or in larger quantities, than needed.
- *Transportation* – non-value adding transportation of work-pieces or raw materials.
- *Motion* – non-value adding movement of people and production assets such as tools and machines.
- *Waiting* – operators or machines spending time waiting instead of working
- *Over-processing* – processing a product over what is specified or required by the customer, by e.g. using expensive, high precision tools when not necessary.

- *Inventory* – redundant raw material, tools or work-in-progress both increase working capital and the storage space required.
- *Correction* – non-value adding utilization of production resources as operating time and materials, required to repair damaged or defect products. (Liker, 2004)

3.1.2 The Toyota Way

In 2001, Toyota formulated their approach to and summed up their knowledge about management and strategy from decades of auto motive manufacturing and the result was the Toyota Way 2001. The Toyota Way is to be described as a philosophy, however the focus is on the culture of Toyota and not just production specifically. The Toyota Way is a sum up of the foundational organizational principles that over time have enabled the success of initiatives such as the TPS. The TPS is therefore the most important example of what the Toyota Way principles can accomplish. Just to clarify – the philosophy of TPS was stipulated by far earlier than the Toyota Way, but the principles of the Toyota Way have since the establishment of Toyota Corporation been an underlying foundation for the way of how the organization work both operationally and strategically, although they were not stipulated until 2001. (Liker, 2004)

The Toyota Way consists of four high-level principles: Genchi Genbutsu, Kaizen, Respect and Teamwork and lastly Challenge. Down below these principles are described (Liker, 2004).

The four principles of the Toyota Way:

- *Genchi Genbutsu* – means go and see to assess the root cause of problems. Decisions should be made slowly with consensus but implementation should be rapid.
- *Kaizen* – means focusing on continuous improvement to eliminate waste. It encourages the use of thoroughly tested methods, standardization of tasks for continuous improvement, visual control to unhide problems, use workflow to identify problems.
- *Respect and Teamwork* – means to respect, challenge and develop the company's own people, teams and suppliers in order to. It also involves stimulation of personal and professional growth for employees and leaders.
- *Challenge* – means to base decision on long-term a vision and strive to meet all challenges with the courage and creativity needed to realize that vision, even at the expense of short-term financial goals. (Liker, 2004)

The principle specifically interesting for this thesis is Genchi Genbutsu. More in depth, it means to go and see at the "real place", at the Gemba, which is the place where the actual creation of value is being made. This, in order to obtain a deep

understanding of what is actually the true situation or problem at the shop floor or in the service desk, when looking to improve. So, problems occurred at e.g. the shop floor, should be solved at the shop floor.

3.1.3 Lean

Lean is to describe, as a generic version of TPS, developed to better support application in industrial contexts other than automotive manufacturing. Womack and Jones (2003), two leading researchers on lean and its different applications, define it as a systemized way of working in order to eliminate waste, i.e. non value adding activities, involving all parts of a business in order to improve efficiency and effectiveness. Lean thinking can be applied in any industry, no matter if it comes to an automated production line or customized assembly. Research made on lean organizations confirms that lean results in increased productivity, quality and customer satisfaction. (Motwani, 2003)

The thoughts and views on lean and how to describe the core of it do vary amongst academics. Jamie Flinchbaugh, a lean consultant and founder of US-based Lean Learning Center, tries to boil things down in his article Beyond Lean (Flinchbaugh, n.d.):

“While oversimplification of lean will not serve you well, when people ask for the shortest possible definition of lean, the answer given is: standardized thinking. This means that all employees in your company have a shared way of thinking that serves them regardless of the problems that they face. This in turn means that if a problem or opportunity surfaces that is not addressed by the traditional tools of lean, the shared way of thinking can address the problem directly and put in place powerful solutions.”

Companies can make great wins, if successfully implementing lean in a way so that total employee involvement emerges. Reduced costs is often depict as a central part of the wins of lean, but what actually is the purpose of lean is increased capacity by, in a systemized way, optimizing business processes regarding to customers' demands. (Bicheno, 2008)

When dealing with lean in a service, not manufacturing, context, Teehan and Tuckers' (2010) way of defining the core of lean is to great help. Especially in the specific case of this thesis, where the focus is set on finding a way to integrate the customer into Carlson's lean system. Below is then Teehan and Tuckers' (2010) definition of lean in services, which is actually a wrap-up of different definitions of lean circling around amongst academics:

- “Focus on value as defined by the customer (and value stream)”
- “Management of flow (including “pull” from customer demand)”

- “Engagement of all in continuous improvement” (Teehan & Tucker, 2010, p. 177)

Regarding the first of these bullet points, value as defined by the customer, George (2003) states: “Quality can *only* be defined by the customer”. Therefore voice of the customer data is needed, but collecting it requires organizational resources and is costly, so efficient ways of dealing with this is crucial. When the customers’ views on a business then have been collected, valuable information can be extracted: Are customer needs met? What is crucial from the customers’ perspective? This information is then to be used when prioritizing and formulating process improvements, to improve accuracy of improvements made according to what actually drives customer value. (George, 2003)

In TPS the seven types of waste are central, for definitions see Chapter 3.1.1. Below George (2003) defines seven types of waste applied in the service context. George (2003) describes the challenge in learning an organization to recognize waste, as one of the major, when implementing lean in service. The nature and definitions of the different types of waste do not differ between the descriptions below and in 3.1.1, but the way the different types of waste appear, differ when occurring in the services context.

The seven categories of waste in service:

- *Overproduction* – production that for the moment exceeds customer demand. If this happens up stream, this results in down stream inefficiencies when service personnel need to take time from serving customers to instead dealing with overproduction.
- *Transportation* – unnecessary transportation of e.g. data or tools in service activities.
- *Motion* – unnecessary movement of people in service activities, such as getting paper forms in the cellar that should be kept next to service desks. This and *Transportation waste* is according to George (2003) harder to detect in service than in manufacturing, but people running around trying to find data stored on different computers or in different parts of a building, could be a symptom.
- *Waiting* – delays between one process activity ending and the following one begins. According to George (2003), value-adding activities in service processes tend to be more invisible than in production. In production you can often see and feel the difference, which is not the case of e.g. sales man knowledge. Asking George (2003), process mapping is therefore key when working on eliminating this type of waste in service.
- *Over-processing* – adding more value to the service than customer are willing to pay for or having non-value adding activities in the value stream.

- *Inventory* – excess work in process according to customer demand, will in the service department result in time taken from the customer to deal with excess work in process instead, which in turn will lead to customers calling to be put on hold and more people having to wait in line.
- *Defect/Correction* – services delivered that do not meet customer needs in terms of e.g. delivery precision, delivery time and service mindedness and the waste of time it generates needed to correct the defects. (George, 2003)

Lean is a wide theoretical field. Relevant for this thesis is however to gain a general understanding for lean as a systemized way of working and philosophy for improving, by engaging all people in the organization. Specifically, the focus for the thesis' is mainly to treat the areas of lean concerning continuous improvement and customer integration, in line with Teehan and Tuckers' approach to lean in service (2010).

3.1.4 Six Sigma

Motorola originally developed Six Sigma as a methodology to arrive at zero defects in production processes, to improve quality by continuously identifying and removing the causes of the defects. The methodology seeks to eliminate deviations from standardized production processes continuously by using different problem-solving methods. One of these is the method of 5 whys, that should enable to identify the root cause of a problem by simply asking why the problem has occurred five times, over in consequential sequence, moving towards the actual root for every time why is asked. For example if a production stop has occurred the answer to why it occurred could be absence of human control. The next why-question would be: why was there absence of human control? With the answer that the employee had taken a coffee break, the next question would be: why is the employee taking a coffee break when he is supposed to control the production, and so forth. (Magnusson et al., 2003)

Business process improvement projects within Six Sigma use a methodology called DMAIC – Define, Measure, Analyze, Improve and Control. This method is aimed at improving complicated business processes in manufacturing with the aid of advanced analytic methods, statistics and technologies. However, the basic principles of DMAIC are simple: Define the problem and project goals; Measure the current process; Analyze data to identify root cause of the problem; Improve the process according to findings from analysis; Control the new process by continuous monitoring and further minimize defects via visualization. (Magnusson et al., 2003)

When applying Six Sigma in production, improvements made can both imply increased quality and decreased cost. However, in some cases tradeoffs between production quality and production cost need to be treated. Imagine a university that is trying to minimize loss of data that occurs when hard drives crashes. To limit the

loss of data to one week of work, backups need to be made 52 times a year, and limiting loss of data to one day, means 365 backups a year, which would be costly. This is an example of a tradeoff situation between quality and costs. (Besanko et al., 2006)

Quality costs can be divided into two types: expected and unexpected. Expected costs is related to investments made in preventing quality failures and these are described as controllable, quantifiable, visible and voluntary. Unexpected cost includes internal and external costs for quality failures and are to be described as uncontrolled, qualitative, hidden and involuntary. (Angell et al., 2001)

Some experts on production quality and improvement programs such as Six Sigma argue that a normal company can save more money on halving their costs occurred by quality issues than by doubling their sales. Between 25 and 40% of sales revenue are spent on quality issues, in a typical manufacturing business. Another number to illuminate is that costs for customer dissatisfaction can measure up to 20 % of the cost of sales, indicating the importance of allocating resources to improve quality. (Angell et al., 2001)

3.2 Customer Value

3.2.1 The basics of customer value

Customer value is a term that has been defined by many, and the definitions diverge (Woodruff, 1997). A simple definition of customer value is the worth in monetary terms of what a customer receives in exchange for the price of a market offering (Anderson et al., 2009). This is a traditional approach to customer value, as value being created in an exchange process (Grönroos, 2008). A deeper understanding of the definition of value can be found in a definition made by Woodruff (1997, p. 142):

“Customer value is a customer’s perceived preference for and evaluation of those product attributes, attribute performances, and consequences arising from that facilitate (or block) achieving the customer’s goals and purposes in use situations.”

This definition lays more emphasis on the customer’s perception rather than the measurable monetary worth of a market offer. As it seems, the latter definition is more suitable in sales and service processes, with the focus on value in the customer’s use situations (Gummesson et al., 2010).

3.2.2 Customer value in the service context

Service-Dominant Logic (S-D Logic) is a widely embraced concept within relationship and service marketing dedicated to proposing a new perspective on the creation of customer value. Its fathers are Vargo and Lusch (2004; 2008), and later embraced by

relationship and service marketing gurus Gummesson (Gummesson et al. 2010) and Grönroos (Grönroos, 2008; Grönroos & Helle, 2010).

The S-D Logic proposes the notion that companies' creation of customer value occurs within their customers' business (or everyday life if the customer is a consumer) with the collection of resources acquired by many suppliers, and companies are merely providers of input in these value-generating processes. The concept is called "value-in-use" rather than the traditional approach "value-in-exchange". Companies and their customers are co-creators of value (Vargo & Lusch, 2004; Vargo & Lusch, 2008; Gummesson et al., 2010; Grönroos, 2008; Grönroos & Helle, 2010).

The managerial implications of S-D Logic are that companies must see themselves as input-providers rather than value creators, and therefore carefully study their customers' businesses and value-generating processes to adapt and develop their services accordingly (Vargo & Lusch, 2004; Vargo & Lusch, 2008; Gummesson et al., 2010; Grönroos, 2008; Grönroos & Helle, 2010).

3.2.3 More on customer value co-creation

Prahalad and Ramaswamy (2004) are known supporters of the view on customer value as being a cooperative process between a company and its customers. Their approach settles at a slightly more strategic management level than the marketing aficionados Gummesson, Vargo, Lusch and Grönroos. Prahalad and Ramaswamy's notions around customer value co-creation are that companies should respect customers' individual expectations and wants, through continuous dialogue by creating a "unique co-creation experience" for every customer (Prahalad & Ramaswamy, 2004, p. 6).

However, there are some issues raised for managers that engage in this demanding co-creation process. The process is very time-consuming, which brings the issue of how to maintain operational efficiency while continuously interacting individually with customers. Control over product design and quality should be influenced by the customer but not handed over to the customer. Transparency is a sensitive issue, which demands the assessment of what level of transparency that is favorable. Customers have heterogeneous demands that are difficult to incorporate into the development of the firm's offers. The integration of the customer also means to share certain amounts of risk with the customer, which demands legal precautions. (Prahalad & Ramaswamy, 2004)

Prahalad and Ramaswamy (2004) introduce the DART-model of co-creation of value. Dialogue, Access, Risk assessment and Transparency are the words that correspond to the acronym. In summary, the DART-model suggests to interact continuously with customers, provide access to company information to the customer, assess the risks

that are shared with the customer in the interaction process and decide on a level of transparency in the company's processes towards customers. The model suggests doing all this to create the unique co-creation experience with customers, but it fails to deliver the message of how to do it.

3.3 Continuous improvement and the customer

3.3.1 Lean solutions

Womack and Jones (2005) put emphasis on the must for companies to match their provision processes with their customers' consumption processes. Although this reasoning is mainly dedicated for B2C relations, Womack and Jones (2005) certify that this applies to B2B relations as well. Upon matching processes with its customers, a company enables to identify deviations between the customers' expectations and the company's standardized processes. These deviations should be the basis for potential improvements in the company's processes.

Womack and Jones (2005) continue with the importance of solving customers' problems completely. In order to do this, employees need to handle complaints in an investigative way. It is all about identifying the root cause of an occurred problem, not only to solve the customer's problem completely but also to learn how the company can improve its processes, so that the problem would not occur again. The aim is to eliminate failure at its true source. This demands training of staff to make them highly skilled and knowledgeable of the company's products and processes. The focus should be at eliminating failure and deviations overall to decrease the collective human input to solve a customer's problem. The challenge in doing this is to install an intelligent feedback loop that progressively decreases mistakes through new insights communicated by the customer. (Womack & Jones, 2005, p. 65)

3.3.2 Lean and voice of the customer

Teehan and Tucker (2010) mean that organizations often focus more on what managers believe customers want instead of finding out what the customer actually want. Lean suggests that value is defined by the customer, according to Teehan and Tucker (2010). They define a situation when the customer does not get what she wants as "failure demand". Research by Teehan and Tucker was made on a call center where their findings were that 50 % of customers that called in did not get what they want. The implications of this research was that performance measurement should not be made for e.g. how many calls an operator can accept, but on how many customers he or she, can satisfy.

3.3.3 Customer driven improvements

Garver (2003) emphasizes the upcoming popularity in research of measuring organizational performance from the customer's perspective. He suggests a

framework for continuous customer driven improvement based on research of how best-practice companies identify improvement opportunities. Some important lessons can be learned from this framework. Multiple customer listening tools should be used when collecting data from the customer and assessing what the customer wants and how satisfied the customer is with what she wants. These tools are e.g. critical incident surveys, relationship surveys, customer complaints, and customer employee contact. The feasibility of the improvement areas identified by the customer should be assessed by benchmarking with competition, assessing firm capability and estimating cost and return on investment (ROI) of the improvement. Lastly, the attributes for improvement should be selected, goals of the improvement should be set and the performance of the improvement should be monitored from the customer's perspective. (Garver, 2003)

3.3.4 Competing in a service economy

Johnson and Gustafsson (2003) do, with their title *Competing in a Service Economy* illuminate the ability of an organization to successfully drive service development and innovation, as a potential competitive advantage. They argue for the value of putting effort into development and innovation of services, in a way similar to what is common for products.

One method is the so-called Critical Incident Technique (CIT). CIT is a concept where Johnson and Gustafsson argue to simply start to list critical incidents that occur in various parts of the organization, and how they have affected the customers (Johnson & Gustafsson, 2003). Another take away from the book is Johnson and Gustafsson's approach on the customer versus internal perspective on customer perception of value. This approach is best illustrated by the following question: "do you gather information from customers based on how you think they view you or based on how they actually view you?". (Johnson & Gustafsson, 2003, p 84)

3.4 Synthesis of literature review

Continuous improvement literature contains a large set of aspects, dimensions and tools. What is clear is that all of them do not apply well to sales and service processes, since their initial application was meant to improve production processes. Furthermore, the objective of Lean being to add customer value does not imply that all of the aspects, dimensions and tools in continuous improvement are linked to customer value.

The frameworks on customer value seem to join in argument that companies should develop their businesses with the perspective that the value creation process occurs at their customers' businesses. Hence, instead of viewing themselves as the creators of value, companies should have the perspective of their business as providing input to their customers' value creation processes. Companies must interact

systematically and continuously with their customers to understand their businesses and how value is created, and adapt accordingly in service process improvements and innovation.

Down below, key take-aways from literature, related to the research question, are presented as segmented into “Dimensions and Aspects” and “Tools”, respectively.

3.4.1 Dimensions and Aspects from theory to consider in the analysis

- Deviations from standardized workflows are important sources for the elimination of waste through continuous improvement
- Customer value is defined by the customer and generated in the customer’s business (“value-in-use”)
- Continuous interaction with customers individually to create unique co-creation experiences is important
- Keeping continuous interaction with the customer on a low time-consuming basis is preferable
- Collect information from customers via multiple sources
- Performance measurement should be based on customer satisfaction

3.4.2 Tools from theory to consider in the analysis

- Visualization – it surfaces problems
- DMAIC – is a well-established method for improvement projects that uses a step-by-step methodology to improve business and production processes
- Critical Incident Technique (CIT) – listing critical incident that has occurred in the organization to be used as sources for improvements
- The 5 why’s technique – defining the root cause of a problem by asking the five why’s

3.5 Literature review criticism

Again, there are many tools developed for different applications in lean organizations and Six Sigma. However, the majority of these were developed for manufacturing processes and therefore, in most cases, not applicable on service processes. Examples of well recognized tools developed for manufacturing processes that was not considered as applicable on the topic of this thesis are: single minute exchange of dies (SMED), 5S and 7 quality tools (Wikipedia, n.d.). Process and value stream mapping is also consciously excluded since there are already established ways for dealing with that, under CWS. Besides the manufacturing nature of these tools, they are not believed to support the clarification of the linkage between continuous improvement and customer value. Not said that they should have a linkage to the customer, but the absence of it is the reason for why they are not used in the development of CVAM. Hence, the main criticism towards the literature review is that the thesis does not cover the whole field of continuous improvement,

nor customer value, like most academic reports. Therefore, the delimitation was made in the study that only aspects, dimensions and tools covering the continuous improvement part of the chosen frameworks should be in focus. The aspects, dimensions and tools that had relevance to the creation of customer value were also prioritized.

The motivation for these delimitations is that the chosen theoretical framework deliberately covers literature on continuous improvements, customer value and the combination of them. In line with the thesis' delimitations, literature covering organizational aspects is not part of the theoretical framework. Although it would have been valuable adding it, it was considered too time demanding (more on that in Chapter 7. Discussion). Every reference selected to be part of the theoretical framework does add value to the analysis, where they are combined and used when analyzing empirical data and developing the CVAM method.

4 Case study: Carlson Wholesale System

The chapter includes a presentation of the case company and its core values and philosophy. After that, descriptions of CMS and the actual case of study CWS are presented. This is followed by the results from performed interviews that have provided foundation for potential development of CWS to being more customer value driven, according to its stakeholders. The presentation of CWS and interviews represent the data subject to analysis in the upcoming Chapter 5., Analysis.

4.1 Introduction of the case company – Carlson

Carlson is a global industrial manufacturer (certain information is left out due to confidentiality reasons). (Carlson, 2010)

Carlson has three different 's different product segments and offers related services (e.g. financing, product training courses) and the strategic aim is to be the industry leader in those segments, by providing customers with premium products with the best total operating economy. (Carlson, n.d, 1)

Carlson Argentina S.A.'s organization consists of the national headquarters called "Business Unit" (BU) situated in Buenos Aires, a sales and services network of dealers, and a globally providing production facility in northern Argentina. The sales and services network consists of nine dealers and five out of these are "captive" dealers, meaning that Carlson owns them. The nine dealers have branches that add up to a total of twenty-one points of sale and service.

Carlson's customers in Argentina demand different products; often depending on in which country region they are operating. Customers operating in the northwest mainly do transportation, the customers from eastern Argentina often operates in agriculture and in the west the main operation is mining.

Carlson Argentina is the main source of data in the case study, with focus on the BU, three dealers and the customers to the dealer in Córdoba, Dealer 3.

4.2 Carlson's Core values

Carlson has three core values that are summarized below, which shape the company's culture and leadership.

The customer at the center – The customer is at the centre of the whole value chain, and via knowledge of the customers' businesses, Carlson creates added value.

Respect for the individual – Higher efficiency and quality and also increased employee satisfaction comes by seeing and exploiting everyone's competences and ambition to continuously develop and improve their work.

Quality – Via gaining knowledge of customers' needs, Carlson continuously improves its products and services to maintain and increase customer satisfaction and their profitability. When doing this, deviations from established normal situations are being treated systematically in either CMS or CWS, as sources of possible improvements.

As seen above, continuous improvements and focus on deviations are part of the core values, which emphasizes the importance of it at Carlson. (Carlson, n.d, 3)

4.3 Carlson's philosophy

It is the methods, the way of working, and not the results that is in focus at Carlson. When striving for doing the right things right one central key aspect at Carlson is to continuously work with improvements in both production and retail. (Carlson, n.d, 4)

Carlson's core values shape Carlson's culture and leadership. In turn the different parts of the organization strive for forming principles or common ways of thinking. Common ways of thinking then require common ways of working – mutual methods is needed. When the results do not meet their own or the customers' expectations, the methods are revised and developed if necessary.

CMS and CWS, which are presented further below, could be described as the operational and systematic way of putting the concept of continuous improvements into the daily work, in both production and retail respectively. However, the core values and the philosophy is the organizational foundation required to make all people work in the direction of CMS and CWS. (Carlson, n.d, 4)

4.4 Carlson Manufacturing System (CMS)

Inspired by TPS and the more generic lean philosophy, Carlson developed their Carlson Manufacturing System. The system's purpose is increased productivity by increasing efficiency and eliminating waste. One significant example of the effects of CMS is stated at Carlson's website: One example is the production unit in the north of Sweden, where, between 2004 to 2007, the productivity increased by 50 percent. (Carlson, n.d, 5)

The four main principles of Carlson's Manufacturing System are:

Standardized working methods – It eases identification of deviations.

Deviations – Do not pass on a deviation to the customer, no matter if he or she is internal or external.

Just-in-time production – Customer pull controlled production.

Continuous improvements – Continuous improvement of the normal situation and eliminating of deviations. (Carlson, n.d, 5)

As seen above, the concept of continuous improvements and deviations are central in CMS.

4.5 Carlson Wholesale System (CWS)

After the success of CMS, Carlson decided to develop a similar system adopted for the company's retail operation, being sales of industrial products and services such as repair and maintenance, spare parts, financing and customer training courses. Hence, Carlson Wholesale System (CWS) is CMS's counterpart for Carlson's retail operation. Carlson started to implement CWS in the sales and services network in 2006. (Carlson, n.d, 6)

The three main principles of Carlson Wholesale System are:

- Streamlining the business from a customer perspective
- The employees compel the improvements, confidently supported by the management
- Shortening of lead times by reducing waste (Carlson, n.d, 6)

The main purpose of both CWS and CMS is to catalyze the power of and engage all people in the organization in the work with continuous improvements, through a systematical way of acting on deviations and eliminating waste, backed up by Carlson's core values and philosophy. The most central effects that Carlson strives for when implementing CMS and CWS are increased customer benefit, improved overall product and service quality and reduced lead times. However, the main challenge in this is to successfully implement and educate this new way of thinking and acting, in the entire sales and services network around the world. (Carlson, n.d, 7)

4.6 CWS and customer value – interviews and participant-observation

4.6.1 Five perspectives on how to integrate the customer in CWS

The purpose of the interviews was to extract different perceptions on CWS, from various stakeholders' perspectives. This was made to identify the needs and gaps

with CWS and its linkage to customer value. In turn, these needs and gaps were the foundation of the development of the CVAM method. Interviews were held on four different levels: with representatives from HQ in Sweden, representatives from the BU in Argentina, dealer representatives in Argentina and customers in Argentina. As an additional source of data the authors were able to participate in a CWS-training workshop. The choice of perspectives are motivated below and afterwards described separately.

Interviews with HQ representatives – the global perspective

Interviews with HQ people were performed with one representative of the CWS office in Sweden, one representative of customer satisfaction surveys and one representative from organizational development. These interviews were focused on the topic customer value versus continuous improvements, with the purpose to collect general perspectives on CWS and its linkage to customer value as well as how the customer was being and had been integrated in the work with CWS. The result was a global perspective on the linkage between CWS and customer value.

Interviews at BU Argentina – the distributor perspective

The second level was aimed at learning about the structure of Carlson Argentina's sales and services network, and the resources at hand that could be used for customer integration in CWS. The CWS-coordinator, a marketing professional and the service director were interviewed. The result of the interviews was a national perspective on the potential development of CWS in respect to customer value.

Interviews with dealer representatives – the internal customer perspective

Interviews with six dealer representatives were held to provide evidence about their perspective as internal customers on continuous improvement at Carlson. One sales manager and one service manager from each three dealers are internal customers in the sense that they are the ordering parties towards the nationally distributing Business Unit. The result from these interviews was the internal customer's perspective on continuous improvements as a mediating party between the BU and the end-customer.

Interviews with end-customers – external customer perspective

Interviews were held with eleven (11) end-customers to provide evidence about their perspective on continuous improvement as external customers. The result from these interviews was the external customer's perspective on continuous improvements and if they could identify, for them valuable, improvement opportunities.

Participation in CWS-training – employee perspective

The authors were able to participate in a three-day training in CWS for regular employees. In that way the authors were able to observe how employees interpreted CWS and make comparisons with theory on continuous improvement

and customer value. Hence, the description below aims at providing the employee perspective on CWS and its connection to customer value in practice.

4.6.2 A global perspective of CWS and customer integration

The perception of CWS is that it is aimed at adding value to the end-customer by eliminating waste through the continuous identification and treatment of deviations from streamlined workflows (Industrial researcher, 2011). This work with CWS has no clearly defined connection with existing customer communication tools such as customer surveys. (Marketing Representative, 2011).

There are standardized global systems for integrating the customer in product related problems, but not for sales and service processes. Some local initiatives have been taken to integrate the customer into CWS. The nature of these initiatives varies regarding their set-up and level of customer integration continuity. However, none of them have advanced enough to be considered as best practices. An important aspect to illuminate when looking at different customer integration methods, is that some dealers are part of Carlson's owned network and others are privately held, and that the dealers are spread all over the world acting in different cultures. (Industrial Researcher, 2011)

If the customer interaction would be too intense, there is the risk of customers getting tired of answering questions. Customer satisfaction surveys with too high frequency would lay too much responsibility on the customer instead of being customer-oriented. However, more informal customer interaction events should be welcomed, that emphasize to let the customer express her needs and complaints when they want. Surveys are good for "taking the temperature" but for improvement issues it is better to speak directly with the customer. Then the organization would be able to find out how a specific deviation or improvement actually affects or would affect a customer's business operations from the customer's point of view. (Marketing Representative, 2011).

Today, efficiency in sales and services is measured similarly to industrial processes such as lead-time, but not from the customer's perspective. It is on the agenda to bring the measurement closer to the customer, e.g. by performing customer satisfaction surveys on individual basis between one salesman and one customer. This will be a kind of self-evaluation and also give possibility to directly act on customer complaints. The risk is however always the "big brother" complex, meaning a fear of being constantly watched, where this type of measurements may lead to sub-optimization. Therefore, these measurements would remain local. Another solution may be to visualize measurements and information from the customer, instead of individualizing them. In that way, problems are surfaced more openly and collectively, enabling to handle problems in cross-functional groups. The goal is not to find guilty employees; it is to identify deficient processes. However, it

is difficult to implant the idea that “we welcomes deviations with warms hands”, because people are often afraid of communicating mistakes, even if they are not responsible for them. (Organizational Development Representative, 2011)

4.6.3 The distributor perspective on CWS and customer integration

Carlson Argentina’s work with CWS is now running regularly at the BU and at one dealer in Córdoba. The experience is that the implementation of CWS at dealers is both difficult and demands time for employees to grasp the whole philosophy on streamlined workflows and continuous improvement. (CWS-Coordinator, CAR, 2011)

Carlson Argentina has a national customer satisfaction survey. The survey enables to extract commentaries from interviewed customers that are then sent to dealers to be able to follow-up directly on the customers’ complaints. Some customers tend to give negative feedback in the customer survey, but avoid giving negative feedback face-to-face to sales and service representatives at dealers. What is seen as important is to have various communication channels for the customer to express his or her needs, wants and complaints. The information through the survey is however not systematically used when working with CWS. But the opportunity of using the information in CWS is considered to be evident. (Marketing Professional, CAR, 2011)

An issue identified with CWS is that its philosophical nature is intangible and therefore not practical enough for employees closest to the customer to understand. Service workshop workers and salesmen have a hard time grasping theories; they need practical tools that are suitable for their working environments. (Service Director, CAR, 2011)

4.6.4 The internal customer’s perspective on continuous improvement

The dealer representatives were simply asked what they thought Carlson should improve in sales and services from their perspective as internal customers to the BU and mediating party to the end-customer. As a result, some patterns could be identified of how the internal customers perceive continuous improvements at Carlson.

An early finding was that all problems that occur at the dealer cannot be solved by the dealer, because the root cause of the problem is actually further up the supply chain.

When asking what the dealer representatives thought could be improved, the responses varied widely, due to individual preferences. One sales manager spoke about order systems compatibility and a service manager spoke about the importance of flexibility of payments. They have all expressed their opinions on

these problems but believe that they are not always heard. At least there is no systematic way of solving these types of problems.

In general it is difficult for dealer representatives so see follow-up of their suggestions for improvements. There are a lot of processes that need improvement, but the information does not always end-up at the right place. A system to enable communication that is specifically for improvements would increase the probability that suggestions for improvement from dealer representatives are acted upon and followed up.

For the communication of improvement suggestions between the dealers and the BU to work well, it is believed that BU representatives from sales and service need to spend time visiting the dealers to understand their situation. An increased transparency and collaboration between the parties would simplify communication regarding continuous improvements. What is missing is a central communication channel between the dealer and the BU, to complement ordinary meetings. What now seems to be a problem is that sometimes when deviations and improvement suggestions are communicated to the BU, it is common that they have trouble of finding someone responsible to solve the problem.

One important aspect to consider is that there is a constant flow of customers entering the dealer, making it hard for sales and service men to commit time for working with improvements. The main responsibility is to sell products and services. Collecting customer feedback and handling improvements locally need to be really easy and time efficient.

4.6.5 The external customer's perspective on continuous improvement

The external customers do not know anything about CWS. However, they know what they want from Carlson and how Carlson could improve their sales and service processes to better fulfill customer needs. Interviews were held with eleven (11) customers at the dealer in Córdoba to see if customer could identify and communicate potential improvement areas where they had had bad experiences. Customers were asked to respond to the question: "What can we improve in our sales and service processes at Carlson, and why should we improve it from your perspective?". They were also asked to explain any event that had not lived up to their expectations and thereby affected their businesses.

Results showed that 4 out of 11 customers were completely satisfied customers that had not experienced any deviations from their expectations. 7 out 11 customers expressed events happened at Carlson that had brought upon interruptions in the customers' business operations, hence events that had deviated from the customers' expectations. These 7 customers were also keen on suggesting improvements in Carlson's sales and service processes that would benefit their

businesses. An interesting fact was that the completely satisfied customers were very familiar and friendly toward the dealer's employees. This could imply that their experience was that their problems were easily solved because of their high rate of visits to the dealer. The other 7 expressed some irritation about having to return to the dealer frequently to handle failures, when they really wanted to work with running their business.

The pattern from interviews with customers is that they often focused their complaints on events that deviated from their expectations. They based their improvement suggestions on these bad experiences. An important aspect that had happened to 5 out of 11 customer was that when they had communicated general problems, they had not been followed up until two or three months after. Even if Carlson could not solve the customer's problem, the immediate follow-up is important to allow the customer to make important decisions.

Important to mention is that the customer expressed complaints retrospectively in the interviews, since the events that had in general not happened recently. In many cases, when possible, the customers and sales or service representatives discuss and sort out problems directly when they occur.

As the authors created a listening environment during interviews with customers, it appeared as they felt open to express themselves freely. The customers were continuously asked more questions which enabled to understand the customers' problems. It seemed as the customers were satisfied with merely being heard.

4.6.6 The participant perspective on CWS

During the three-day training at the dealer in Córdoba, the authors deepened their understanding of CWS in practice. By participating as any other employee at the dealer, lessons were learned of how CWS actually connects and does not connect to customer value.

The practice of CWS entails to work in cross-functional groups with mapping processes to detect deficiencies and then continuously improve these processes. There is a set of tools for working in specific improvement groups that are aimed at making the improvement work as simple as possible. One of these tools is visualization. Another is focusing on deviations and improvement suggestions in the visualized processes. After having detected problems, improvement groups are formed responsible for inventing and implementing solutions to these problems. All with a bottom-up and pull approach.

Respect to customer value is taken in the work with CWS, but it is not taken by asking the customer. Instead it is what the employees believe is valuable to the customer. Improvement suggestions are mainly generated based on these

conceptions. Although it seemed that the employees at dealers had a good perception of what the customer wanted, it was difficult for them to see how the improvements they made would add customer value to the end-customer. A descriptive example was a comment from one of the mechanics:

“How do we know that the improvements we make in CWS will benefit the customer?” (CWS-training, 2011)

The training supervisors emphasized that CWS is not supposed to be a set of tools, rather a philosophy and way of thinking. This was complicated for some employees to understand, as well as the concept of how working with the philosophy would add customer value.

4.7 Synthesis from the case study

The different interviewee perspectives have described opportunities of integrating the customer into CWS and thereby provide evidence of what the method to enable customer value driven continuous improvement could contain. The most important elements identified from these perspectives that contribute to the contents of the CVAM-method are:

Global perspective

- Customer surveys can be used as information to work with CWS in a more customer value driven way.
- There is no standardized and globally known system for collecting information from the customer regarding sales and service processes and integrating it in the work with CWS.
- A more systematic collection of information from the customer should not be to increase the frequency of customer satisfaction surveys. The customer would get tired of answering preset questions too often. Instead a continuous interaction should be more informal to not interrupt anyone's daily operations. The focus should be on learning and understanding the customer's business operation and how Carlson can improve its operations to improve the customer's business.
- Measurement of performance should be done locally to enable direct actions but avoid the “big brother” complex. Problems should not primarily be reported to a higher instance, only when necessary. Instead they should be visualized and treated locally.

Distributor perspective

- Difficult to implement and for employees to grasp the concept of CWS because of its philosophical nature.
- The national customer survey is not linked to CWS, but the opportunity to do it is favorable.

- Practical tools are needed to support the philosophical nature of CWS. These tools should also be suitable for working environments in service workshops.

Internal customer perspective

- Some problems that occur at the dealer are caused by problems occurred at the BU.
- There is no system for leading information about potential improvements to the right place upwards and that ensures follow-up towards the dealer on communicated problems.
- A transparent communication channel between the dealers and the BU specifically for improvements would be favorable.
- It is important that collecting information from the customer and working with CWS should not interfere with everyday business.

External customer perspective

- End-customers are able to communicate both complaints and improvements suggestions.
- Some customers are completely satisfied with Carlson. Others have had bad experiences that have affected their business by causing interruptions.
- Follow-up of problems that customers had communicated to Carlson had been done without consistency. Even if a solution does not meet customer demands, the follow-up is important to enable the customer to make decisions.
- Listen to the customers, try to understand their problems, and they will be able to communicate.

Participant perspective

- Visualization and focusing on deviations are effective methods.
- It is not clear for participants how improvements made by CWS actually benefit the customer.
- There is a need to embody the concept of CWS by supporting tools that enable to integrate the customer more.

5 Analysis

In this chapter, the research questions are analyzed with basis in theory and empirical findings from the case study. The analysis describes the development of the CVAM-method, and the chapter ends with a presentation of the tests made with the CVAM-method as well as the following evaluation of these tests.

5.1 Analytical approach

The chapter is dedicated to analyzing the answers to the three research questions. A repetition of these is therefore in order to provide a comprehensive introduction to the analysis:

- What dimensions, aspects and tools should be part of a practical method that enables customer value driven continuous improvements in sales and service?
- How should customer value be defined in the context of continuous improvement to fit the method?
- How should the method be designed?

A flashback at the motive for developing a method that enables customer value driven continuous improvement is suitable as well. Remember that the practice of lean has the objective of adding value to the customer, but that it is often difficult for companies to move away from “shop-floor” focused improvements towards customer focused improvements (Hines et al., 2004). Furthermore, Carlson sought for a practical way to clarify the customer value from working with continuous improvement. The CVAM-method’s purpose should therefore be to facilitate the increased focus on the customer when working with continuous improvements.

Hence, customer value is at center of attention, and should therefore be the first issue to investigate to let the method be based on the focus on clarifying customer value in continuous improvement. By starting with an analysis of the definition of customer value in the context of continuous improvement, the following analysis of the content and design of the method will have a basis in a “customer-pull” and from the customer “bottom-up” approach. The authors’ belief is that this approach increases the probability that continuous improvement will be customer value driven. A presentation of performed tests of the CVAM-method and a deep evaluation of these tests extends the analysis in the end of the chapter. Thereafter, a full presentation of the CVAM-method in practice is done in Chapter 6. The model below summarizes the analytical approach in the development of the CVAM-method and thus fulfillment of the purpose of the thesis.

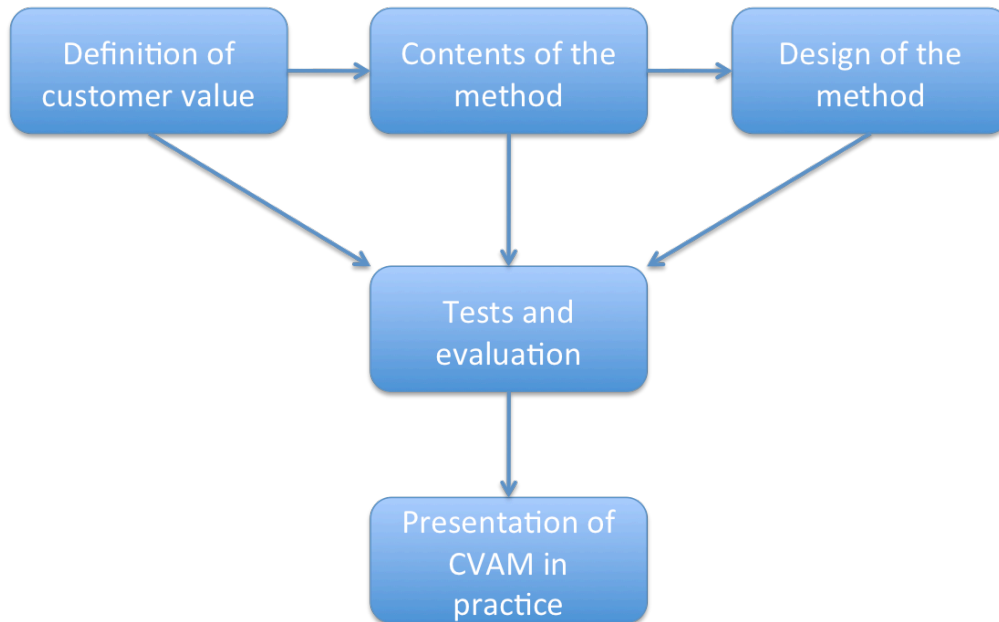


Figure 1 Analytical approach

5.2 Defining customer value in a continuous improvement context

The definition of value to fit the method should not only be applicable to continuous improvement, but also to continuous improvement in sales and service processes. It needs to be practical, comprehensive and translatable into action for both managers and workers, since the method is supposed to be used by the people closest to the customer. This implies the need of a definition that disregards product attributes and focuses more on the consequences expected by the customer as defined by Woodruff (1997). Customer value in a service context is defined by Gummesson et al. and Grönroos (2010; 2008) with emphasis on “value-in-use”. Their perception of the value creation process as generated in the customer’s business emphasizes that a company is an input-provider in that process among other suppliers. The definition in continuous improvement frameworks of customer value refers to “value as defined by the customer” (Teehan & Tucker, 2010). This approach is similar to the S-D logic approach of “value-in-use”. How can then these approaches be clarified in the context of continuous improvement of sales and services?

Continuous improvement literature and Carlson consider *deviations* to be important sources for improvement. A deviation in this sense is defined as an event that deviates from a standardized workflow or process. The authors found deviations as sources for improvement to be an easy and comprehensive way to motivate which areas needed improvement, as an experience while participating in the CWS-training. Furthermore, interviews with customers showed that their perceptions on what

Carlson could improve were often based on negative experiences where Carlson's sales and service processes had not lived up to the customers' expectations. It was clear that the customers expressed complaints about issues that were highly valued because they had caused interruptions in their value creating processes. One example is when an important spare part is out of stock at Carlson and the customer's machine is left standing still without generating income. This problematic situation is described by Womack and Jones (2005), when the customers' consumption processes deviate from Carlson's standardized provision processes.

The perspective on customers' perceptions of deviations from their expectations was found to be similar to a deviation as defined in continuous improvement literature and by Carlson. If deviations are important sources for improvement, why not let the customer be the judge of what is a deviation and what is not? The authors' belief was that if Carlson would let their customers identify and communicate events that they perceived as deviations from their expectations, and consider these "customer-identified" deviations as important sources for improvement, the continuous improvement work would be more oriented to the customer's preference. In line with Gustafsson and Johnson's (2003) description of the Critical Incident Technique (CIT), a customer-identified deviation can be compared to a critical incident that can be used as a source for improvement. Furthermore, a customer-identified deviation should be interpreted as causing interruptions in the customer's value generating process. The definition of customer value in the context of continuous improvement of sales and service processes would then include "value-in-use" in a retrospective aspect:

The customer defines customer value in terms of occurred deviations from expectations in the supplier's sales and service processes that have caused interruptions in the customer's value-generating processes. (Authors' definition of customer value)

This implies that customer value can easily be defined and used as a source for improvement by workers and managers in the form of what the authors refer to as "customer-identified deviations". The reasoning is based on interviews with customers that expressed occurred events that deviated from their expectations as having negative impact on customer value because their value-generating processes were interrupted. The below graph illustrates an approach where deviations have negative impact on customer value. At every given level of customer value, an occurred customer-identified deviation will have negative impact on the latter.

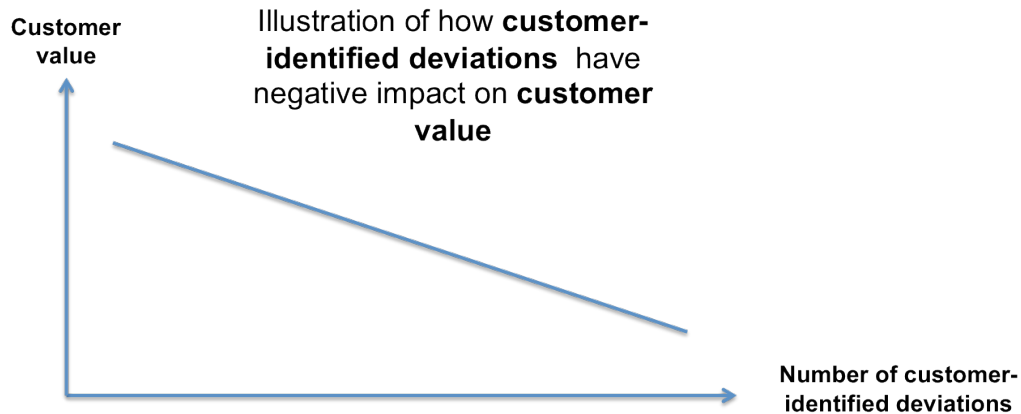


Figure 2 Illustration of the relation between customer-identified deviations and customer value

The graph is a theoretical proposition (with no mathematical statistics behind) that clarifies in an illustrative way, the authors' definition of customer value in the context of continuous improvements of sales and service processes. Using customer-identified deviations as sources for improvement is believed to enable customer value driven continuous improvement. According to this reasoning, Carlson would be able to create more customer value by eliminating customer-identified deviations, since they improve the business towards what the customer wants. In this way, Carlson is able to continuously interact with their customers and extract the customer's value perception in line with Prahalad and Ramaswamy's arguments about listening individually to customers and creating unique value experiences (2004).

The customer-identified deviations are also believed to be measurable, and could by that indicate how Carlson's work on improvements is performing according to customer value, as emphasized by Garver (2003). More specifically, the measurement of the number of deviations that occur in certain processes would enable the prioritization of improvement efforts to the areas that the customer perceives as most valuable and critical for their operations.

5.3 Requirements for customer value driven continuous improvements

With the definition of customer value at hand and the focus on customer-identified deviations as source for continuous improvement, the development of a method to manage and eliminate these deviations was the next step. This development required answering the question of what the method should contain in terms of dimensions, aspects and tools. A reasonable departing point is to set up a requirement specification of the content based on findings from literature and the case study.

The requirements for the content of the method should be categorized in order to compare the findings from theory and the case study and thereby identify appropriate dimensions, aspects and tools for the method. It is considered to be two sides of the problem to enable customer value driven continuous improvement. First, the communication with the customer needs to be set in order to extract information in the best possible way. Second, the information from the customer needs to be handled internally within the organization in the best possible way. In this sense, there are two perspectives: external (towards the customer) and internal (within the organization). The literature on customer value has requirements on dimensions, aspects and tools for the external perspective, whereas literature on continuous improvement has requirements on dimensions, aspects and tools for the internal perspective. The literature on continuous improvement and the customer has requirements on dimensions, aspects and tools for both perspectives. Added to these sources of information is the case study that also has produced requirements on dimensions, aspects and tools for both the internal and external perspectives. The requirements are collected from the syntheses in Chapters 3. and 4. and summarized in the table below.

Perspectives	Literature review	Case study
<i>Dimensions, aspects and tools towards the customer (external perspective)</i>	<ul style="list-style-type: none"> - Collect information from customers using multiple sources - Interact continuously and individually with customers - Keep customer interaction on a time-efficient basis - Performance measurement should be based on customer satisfaction - Critical Incident Technique (CIT) can be used for collecting information from customers 	<ul style="list-style-type: none"> - Use customer satisfaction survey as source for customer-identified deviations - Informal and continuous customer interaction is preferable - Communication with customer should not interfere with everyday business - Focus primarily on local performance measurement towards the customer at dealers to avoid big brother complex - The customer has a lot to say if the supplier listens - Follow-up on customer-communicated problems is key
<i>Dimensions, aspects and tools internally (internal perspective)</i>	<ul style="list-style-type: none"> - Deviations are sources to identify waste - Visualization is a good way to surface problems - Root-cause analysis is an often used tool - DMAIC is a step-by-step method for improvements of processes 	<ul style="list-style-type: none"> - Deviations are a well-proven source to identify potential improvements - Visualization is used regularly as a tool at the case company - Tools need to be practical, easy-to-use and suitable for working environments - All problems cannot be solved at the dealer because some are rooted at the BU - Communication channel from the customer and upwards in the

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		<p>organization</p> <p>- Clarify and communicate internally the customer value from improvements made</p>
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Table 1 Requirements for the contents of the method for customer value driven continuous improvements

A comparison of the requirements supports the arguments for a description of what the method should incorporate from the external and internal perspectives.

5.3.1 External requirements

A general discussion on the external requirements shows that the customer should be interacted with in many ways, continuously and individually according to literature. Adding the findings from the case study, this interaction should be informal but not require too much time that it interferes with everyday business. The measurement of performance should be done based on customer satisfaction according to literature, and this measurement should be as local as possible according to the case study. An important finding from the case study is that the customer has a lot to say about their experiences and potential improvement from their perspectives in sales and service processes, only if a supplier puts effort in listening. It is also key to systematically follow up on the customers’ communicated experienced problems and improvement suggestions, even if they cannot be solved or realized.

5.3.2 Internal requirements

Deviations are in both literature and from the case study good sources for the identification of waste and improvement opportunities. This reasoning is already used in the definition of customer value in the continuous improvement context above. The method should therefore use customer-identified deviations as sources for improvement. Visualization is another tool that is both referenced in literature as from the case study. The method should enable to visualize the customer-identified deviations. Root-cause analysis is mentioned as a good technique to identify the true cause of an occurred problem. If the root-cause analysis would be applied to customer-identified deviations, it would enable to solve the customer’s problem at the true source. The method should therefore include root-cause analysis. These tools are in literature considered as effective but an important finding from the case study that the use of these tools must be time-efficient and their application must be suitable for a working environment. Another important finding is that the problems that are surfaced by visualization and dealt with by root-cause analysis must be communicated in an effective way to be solved in the responsible process. Therefore, the method should enable a communication channel for customer-identified deviations that goes via the dealer and if necessary to the BU to solve problems at its root. The whole method should clarify that improvements made

actually benefit the end-customer. DMAIC is a good inspiration since it is aimed for improvement projects. However, as the case study shows, the method must be simple and easy-to-use, whereas DMAIC is a managerial method. The method should therefore be a step-by-step method as DMAIC, but of much simpler design to be easy for both managers and workers to use.

5.4 Design of the method

The design of the method is based on the definition of customer value in the context of continuous improvements in sales and service processes as well as the requirement specification above. The below table describes a further categorization of the requirements into four steps to handle customer-identified deviations at different levels that is believed to enable the elimination of customer-identified waste and thereby create additional customer value. The four-step design of the method was inspired by DMAIC from Six Sigma. This design was also in line with Carlson’s requirement of being easy-to-use, since the four steps are comprehensible for both managers and employees. The requirements inside the below table are abbreviations from the earlier presented requirement specification from both the literature review and the case study now put together:

Requirements			
External perspective	Internal perspective		
Collect	Visualize	Act upon	Monitor
<ul style="list-style-type: none"> - Interact continuously - Interact individually - Critical Incident Technique to detect customer-identified deviations - Use multiple sources - Use customer satisfaction surveys - The customer has a lot to say if the supplier listens - Informal and continuous customer interaction is preferable 	<ul style="list-style-type: none"> - Visualize to surface problems - Visualization is used regularly as a tool at the case company - Keep customer interaction time-efficient - Tools need to be practical, easy-to-use and suitable for working environments 	<ul style="list-style-type: none"> - Time-efficient handling of customer information - Clarify and communicate internally the customer value from improvements made - Root-cause analysis is an often used tool 	<ul style="list-style-type: none"> - Local performance measurement to avoid big brother complex - Follow-up on customer-communicated problems is key - Communication channel from customer-dealer-business unit

Table 2 Categorization of requirements for the customer value driven continuous improvements method

The four steps are described thoroughly one by one below, with reference to the requirements that are categorized into each step. All four steps constitute the process of eliminating customer-identified deviations (waste) and thereby represent customer value driven continuous improvement.

5.4.1 Collecting customer-identified deviations

Gustafsson and Johnson's (2003) reasoning on Critical Incident Technique (CIT) and how to gather information based on the customer's perspective are important inputs. SD-logic by Gummesson, Vargo and Lusch (2010) support Gustafsson and Johnson's reasoning, saying that a company must look at value-creation as a process that occurs in their customers' businesses. Lean Solutions by Womack and Jones (2005) also state the importance of understanding the customers' businesses, and improve processes in cooperation with the customer, as do other earlier referenced authors (e.g. Garver, 2003; Teehan & Tucker, 2010; Prahalad & Ramaswamy, 2004). From literature it is clearly evident that information needs to be collected continuously from the customer in a way that a company understands what the customer wants, needs and values. If the employees can continuously catch the customers' perspective, they will much better understand what the customer needs and through that knowledge develop services in the right direction.

The first step of the method for customer value driven continuous improvement could be summarized under the term to *Collect* customer-identified deviations. At the interviews with customers it was revealed, that by putting effort in understanding the customers' issues with Carlson and asking further questions, the customers easily express their bad experiences (Critical Incidents) from their perspectives. In the collection of deviations the emphasis should hence be on letting the customer speak freely and ask further questions to get to the root of the customer's problem that Carlson has caused. In this way, the collection of customer-identified deviations from the customer should be made with the effort to understand the customer perspective.

According to literature, the collection of information from the customer should be made from multiple sources and channels (Garver, 2003). At Carlson, there are customer satisfaction surveys and employee customer contact that can both be used when collecting customer-identified deviations. Answers from interviewees were heterogeneous except for the general dissatisfaction about the high price level for service. The heterogeneity of the answers confirmed Prahalad and Ramaswamy's (2004) thoughts on the difficult and time-consuming process to synthesize all the different data collected from customers. The collection process might be easy, but the adaptation of processes and services according to the customer wants would require resources. This issue needed to be respected in the next step of the method.

5.4.2 Visualizing deviations

Continuous improvement literature emphasizes to use visualization as a tool to surface problems in standardized workflows to work with continuous improvements. The concept of visualization was believed to be appropriate for handling customer-identified deviations as well, as it is also a well-used tool by Carlson. A visual board that supports meeting agendas to process customer-identified deviations would enable a common playground for the participants to treat surfaced problems, together as a team. The collected customer-identified deviations would therefore be described on a visual board.

A visual board would enable to visualize customer-identified deviations for every employee, and thereby daily inform people efficiently about the problems that are occurring within the organization. A visual board is practical and can be placed at spaces that are visible for everyone and can be used by everyone.

From every type of communication with the customer, when a customer-identified deviation has been detected it should be written down on the board. As an initiative to communicate the message that the customer had, the employee that detects the customer-identified deviation should also write his/her name and the customer's name.

5.4.3 Acting upon deviations

When the customer-identified deviations have been visualized, they need to be handled internally in a time-efficient way to not interfere with everyday business, the customer value that could be created from doing improvements should be clarified and root-cause analysis should be used to arrive at the true problem of an occurred customer-identified deviation. These dimensions can simply be summarized to *Act upon* customer-identified deviations.

The design of a visual board is crucial, to provide meetings dedicated to improvements with efficiency and thereby minimize time-consumption that interferes with the everyday operations (Pralhad & Ramaswamy, 2004). The deviations would therefore need some kind of prioritization to ensure the efficiency of handling them. These dimensions are in line with Garver's arguments on identifying customer driven improvements (2003). The deviations that are identified as highest priority would be treated first to direct efforts towards eliminating the deviations with most impact on customer value.

The result from this step is to decide on an action to eliminate the customer-identified deviation. The action could be either to fix the problem quickly, form a project group if the problem is complex or to communicate the problem if the source is identified further up the organization.

5.4.4 Monitoring deviations

When a deviation has been acted upon, both the DMAIC-method and Garver's (2003) arguments would imply that the handling of the deviation, hence the improvement action performed, should be monitored and controlled. Another identified issue from interviews was that a problem must be solved at the source, and this source may not always be at a dealer. Then the last-step of the method should both allow monitoring performed actions to eliminate deviations and communicate deviations to its original source, e.g. at the BU.

An intranet module would serve that purpose, enabling to create a historic perspective to handled deviations and thereby assess the improvement performance (Garver, 2003). Also, if the intranet module is open for all dealers and the business unit it will enable to communicate deviations to its original source and the identification of best practices. However, the module must be formed so that the big-brother complex is not created, and the measurement should be only to see how improvement projects are developing. A transparent intranet module is instead mainly for communicating problems that have its root further up in the organization, to share experiences with other dealers and to emphasize problems that occur at many dealers but that should be solved at the BU.

5.5 Testing and Evaluation of the method

The four steps of the method – Collect, Visualize, Act upon, Monitor – needed testing to learn about their functionality and feasibility and thereby enable to further develop the method. Prototypes for two tools were developed: the "Improvement board" that corresponds to the Collect, Visualize and Act upon steps and the "Improvement monitor" that corresponds to the Monitor step. The criteria for testing the method were 1) response from employees, 2) experiences learned from the tests and 3) further development opportunities. These criteria are set up as sub-headlines in each step.

5.5.1 Collect and Visualize

Two whiteboards were put up at the dealer in Córdoba, one for sales and one for services processes to perform tests. The instructions were that when an employee had identified a deviation experienced by the customer, he or she should write it on the whiteboard. A visualized deviation was written on the Improvement Board with: description, name of the customer, name of the employee and date, which is showed in the table below. The first half of the Improvement Board, the three columns to the left in Table 3. below, was up during two weeks of testing (14-25 March, 2011) in the sales and services department respectively.

Improvement Board					
These columns are filled in when <i>Visualizing</i> the deviation or improvement suggestion.			These columns are filled in when <i>Acting on</i> the deviation or improvement suggestion		
Description	Customer's name	Employee name & Date	Prioritization	5 Why:s	Action & Responsible

Table 3 Prototype for the Improvement board

The terms in the three columns to the left, which are used when *Visualizing*, is here briefly explained:

- Description – the employee here writes a description of the customer-identified deviation.
- Customer's name – name of the customer or customers that communicated the deviation or improvement suggestion and if internal this box is left blank.
- Employee name & Date – the employee reporting the deviation or improvement suggestion writes his own name and the date for when it occurred.

In 5.5.2 an example of a deviation will be given to illustrate how the Improvement Board works in practice.

5.5.1.1 Response from employees

The Service Improvement Board collected four major frequent deviations and the Sales Improvement Board collected about fifteen more or less frequent deviations during the week of testing. Directly after having put up the Improvement Board for service processes, two mechanics wrote one deviation each. By visualizing the deviations, the participants agreed on that it did incentivize to act upon them – the deviations were highlighted for their team and turned tangible. The participants communicated the message that the visualization step was simple and useful to elevate deviations.

5.5.1.2 Experiences

The most noticeable experience from the first two steps was that not one customer name had been written on the improvement board. The deviations were still deviations identified internally. It did not seem clear for the employees that it was important that the customer should identify the deviations. However, the comment from most participants was that many customers had earlier identified the majority of the deviations. They saw the opportunity to retrospectively fill in customers' names when the deviations would occur in the future.

5.5.1.3 Further development

The method needs to be tested during a longer period of time. The visualized deviations had affected customers, but they had in most cases occurred during a period of several months. Therefore specific customer names had been forgotten, since again, there was no systematical way of treating customer feedback. The opportunity to work on customer value by, after a deviation has occurred, get back to the customer and tell them that the deviations is being treated is therefor lost. However, by systemizing the customer feedback treatment, the opportunity to increase customer satisfaction by showing that their negative experiences are being tackled by the organization, will be exploited.

The learning from this is that the value and importance of writing down the name of the customer needs to be illuminated and incentivized by managers.

5.5.2 Act upon

Now when the deviations are Visualized, the next step is Act upon. Once a week, or when the Improvement Board is filled up with deviations, it is time to act upon them. Hence, the manager calls his colleagues to an Improvement Meeting and the three columns to the right in the table below are to be filled in together in the team.

In the table below the content of the Improvement board is illustrated with an example of a customer-identified deviation of a missing spare part (waterpump).

Improvement Board					
These columns are filled in when <i>Visualizing</i> the deviation or improvement suggestion.			These columns are filled in when <i>Acting on</i> the deviation or improvement suggestion		
Description	Customer's name	Employee name & Date	Prioritization	5 Why:s	Action & Responsible
Missing waterpump	Carlos O.	Fernando Bustamante, 110410	High	1. Deviating stock level 2. Inaccurate demand forecast 3. Demand for waterpumps is volatile 4. Forecasted demand was decreased last quarter 5. -	Communicate this inaccuracy to market department, they should increase their forecast for waterpump demand, by at least 2 units, Fernando B is responsible.

Table 4 Prototype for Improvement board

Below are some brief explanations of the Improvement Board's terms in the three columns to the right, used when *Acting upon*:

- Prioritization – the urgency of the deviation or improvement suggestion is set to low, medium or high symbolized by yellow, orange or red.
- The 5 Why:s – the root cause of the problem is here identified.

- Action & Responsible – the team here writes the action they have decided and also sets someone to be responsible for making it happen.

5.5.2.1 Response from employees

Two improvement meetings were held, one for service and one for sales personnel. The employees that had written deviations were those that participated in the meetings lead by the sales and service manager respectively. The other half of the Improvement Board was put up to go through the three steps: prioritize, identify the root cause and decide on actions for the deviation.

The first step was a discussion about the frequency and impact on customer value of the visualized deviations. They were to be rated with Red, Orange and Yellow colours, where Red meant high, similar to other Carlson methods.

The second step was to identify the root of the problem of the deviations in the prioritized order, by asking the “five whys”.

The third step was to decide on an action: e.g. create an CWS improvement group and write an A3, solve the problem directly and easily, or send the description of the problem to the BU if the problem had its origin there.

Below, in Figure 3. and 4., are the two Improvement Boards after the meetings were held. The experience from the participants was that it was an effective way to not only solve problems, but also to inform employees about problems and solutions in a participative way.

5.5.2.2 Experiences

It should be beneficial setting up a more cross-sectional participation in the weekly meeting, to add even further perspectives. However, the number of participants needs to be limited to ensure the efficiency of the meeting and to not reduce too much of the customer meeting capacity. The meeting should not take more than 30-60 minutes, shorter meetings more often, like one per week, would be better than longer meetings once per month. It was revealed that the meetings were not only beneficial for solving problems, but also to inform and increase understanding, in a participative way, among employees about why deviations occur as well as how they can be eliminated. Also, the understanding amongst the employees concerning their different responsibility areas in general, seemed to increase.

The Service department meeting was very effective and the participants had much to contribute with. They even solved a problem in the first meeting. The Sales meeting was not so efficient. The prioritization was slow and after one and a half hour of discussing the origin of the many deviations on the board, there was little time left to identify root and decide on an action for a deviation. We left comments in the end of the meeting that the meeting needs to be much more effectively lead, to get direct results of working with the Improvement Board. The photos below of the Improvement Boards were taken after the meetings.

Customer Value Driven Continuous Improvement in Sales and Service

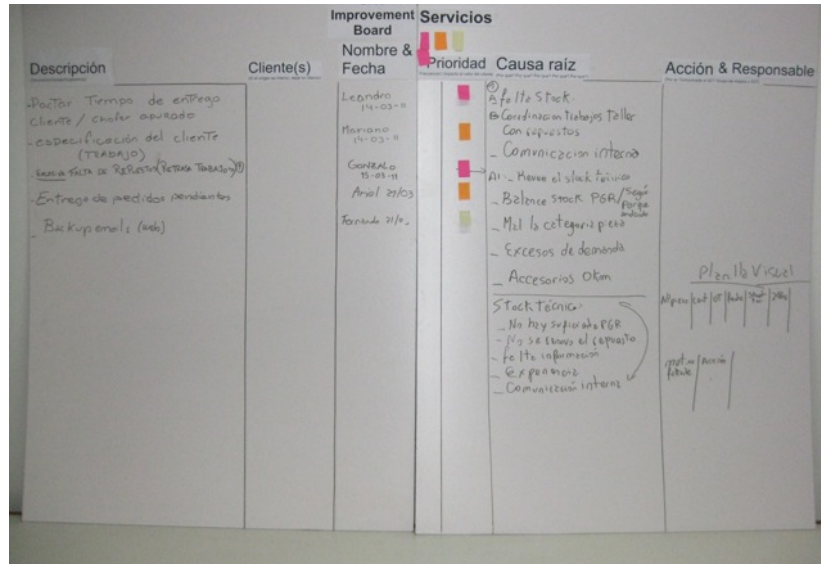


Figure 3 Improvement Board for service department

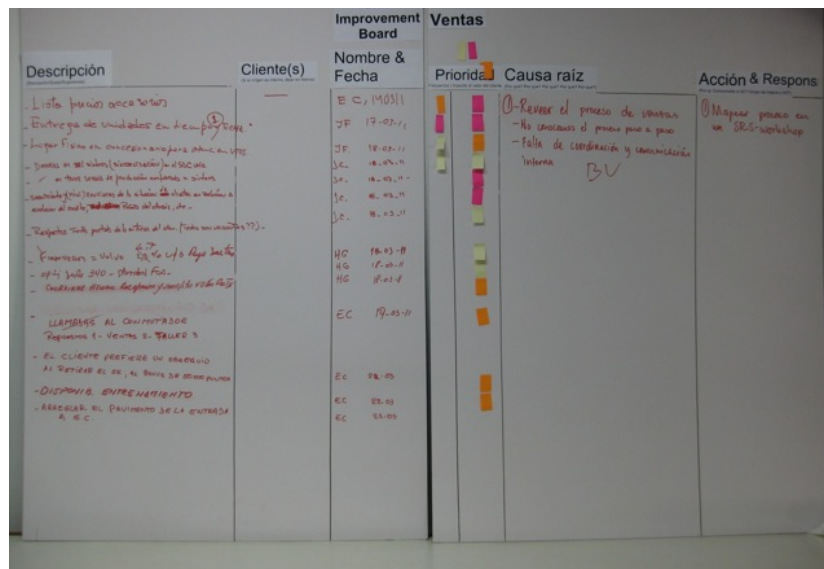


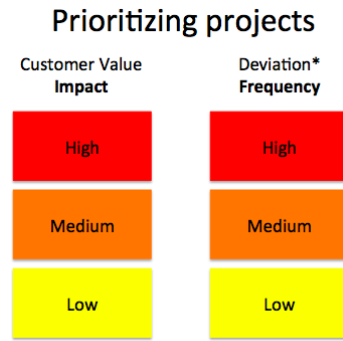
Figure 4 Improvement Board for sales department

5.5.2.3 Further development

As experienced during the sales department meeting, the prioritization part was way too time consuming. The conclusion was that the manager needs to be more structured and disciplined when leading the meeting, to avoid losing focus from what is most urgent to deal with, when discussing. Therefore, to support the manager and the team when determining the most urgent deviation to act upon to

Customer Value Driven Continuous Improvement in Sales and Service

start the work towards an eliminated deviation or an improvement, the prioritization part of the CVAM method, was developed. Two priority criteria were compiled: *frequency* of an occurred deviation or suggestion for improvement and its estimated *impact on customer value*. Below these two criteria are illustrated.



*Frequency of improvement suggestion

Figure 5 Prioritization of deviations

5.5.3 Monitor

The Improvement Monitor was tested by letting sales and service managers at Dealer 3 give their input on the layout of the Improvement Monitor, in Figure 6. below, after which it was improved it accordingly. We also let them make the judgement of how much time they could spend on working with the Monitor.

	A	B	C	D	E	F	G	H	I	J
GC Improvement Monitor										
On-going SRS projects										
Description	CPC/A3	Pulse status								
Develop a method for collecting debt faster	Link to CPC/A3	Link to Pulse Report BU (see attached file)								
On-going improvement projects										
What?	Why?	How?	Who?	Pulse status						
Refurbishing and improving the office layout	Improve customer's impression and working environment	Hire carpenters that work together with Scania facilities	José A. Mannuco	Link to Pulse Report Cordoba						
Rooted at BU										
Description (deviation/improvement)	Customer(s)	Reported by	Date	Frequency	CV affection	Root cause (five why)	Action	Pulse status	Comment BU	
Fictive ex: The salesmen needs laptops		Carlos Naval	2011-03-31			Decision taken by BU 2007	Communicate to BU	Link to Pulse Report BU	Any specific needs	
Processed deviations/improvements										
Description (deviation/improvement)	Customer(s)	Reported by	Date	Frequency	CV affection	Root cause (five why)	Action	Process		
Lacking stock of water pumps - deficient technical stock	"Rodríguez Transport"	Fernando Bustamante	2011-03-31			- the water pump had not been ordered - not enough PGR - lack of information about demand - lack of experience about demand - internal communication	Created an improvement group and A3	Spare part sales		
Completed projects and Best practices										
What?	Why?	How?	Who?	Type	Best practice					
Magnetic name tags to use when a mechanics takes a tool, so that his colleagues knows where to get it	Tools were hard to find when needed by several mechanics	Produced our own name magnetic name tags	Fernando Bustamante	Quick fix	Yes					

Figure 6 The CVAM Improvement Monitor

After the improvement meeting, the sales and service managers transferred the information from the Improvement Board into the Improvement Monitor. It is truly simple and little administration is required.

The functions of the Improvement Monitor are:

- communicates deviations to the part of the organization that is responsible the deviation or is concerned by the suggestion or complaint
- enables the identification of Best Practices between dealers
- enables the measurement of estimated frequency and impact on customer value of deviations
- enables follow-up for the dealers of deviations communicated to the BU

5.5.3.1 Response from employees

The Sales and Service managers believed that it was easy for them to enter the data of processed deviations that have been given actions after an improvement meeting. They believe that the Monitor will help managers at the dealer and BU to get an overview of how the organization is performing in terms of deviations occurred and improvement projects going-on. In the long run it was also found out that it would help to identify best practices and to prioritize improvements projects at the business unit requested from the dealers. E.g. if several dealers are listing an improvement request concerning a complete and once a month updated industrial product accessories price list, this project should get a high priority as it will benefit several dealers.

An idea that came up during the tests was also to add commentary fields under the list for deviations rooted at BU, so that the dealer and BU easy can communicate when treating the deviation. This, to keep the communication in a separate forum only focused on improvements.

5.5.3.2 Experiences

During the investigation process we tested different formats for the Improvement Monitor's capacity and functions. At first the idea was to measure the absolute number of collected deviations. However, our tests showed that the absolute number of deviations in sales and service is difficult and demanding to determine. It was revealed by the users of the Improvement Board that it would be easier and in most cases enough accurate to estimate the frequency of deviations together in the team, which resulted in the foundation for monitoring in the Improvement Monitor.

Another idea was to calculate the customer value impact of specific deviations, into actual costs for specific customers. Similar to above, it was found out that it would be to demanding doing this in exact numbers. Hence, a more indicative measurement where the team together estimate the customer value impact is considered enough accurate to decide on whether the deviation or improvement is a yellow, orange or red one when making the prioritization.

5.5.3.3 Further development

Some specific developments of the Improvement Monitor were made after the test session. As it was found out that the Improvement Monitor would be also a platform for identifying best practices, a best practice-list was added so that other dealers can

see how other dealers are working and how they have solved different problems. And, as described above, commentary fields were added to the list for deviations rooted at BU. The priority part was also changed, so that Improvement Monitor matches the way priority is being made at the Improvement Board, as described in 5.5.2.3.

5.6 Synthesis of analysis

The method described above holds the four steps Collect, Visualize, Act upon and Monitor. An appropriate acronym was therefore CVAM, corresponding to the first letters of every step of the method. Since the method aims at assessing customer value in continuous improvement, a name for it was discovered as the Customer Value Assessment Method, also corresponding to the acronym CVAM. In Figure 7. below, CVAM is described from a flow chart perspective that illustrates how customer-identified deviations are systematically eliminated when using the method.

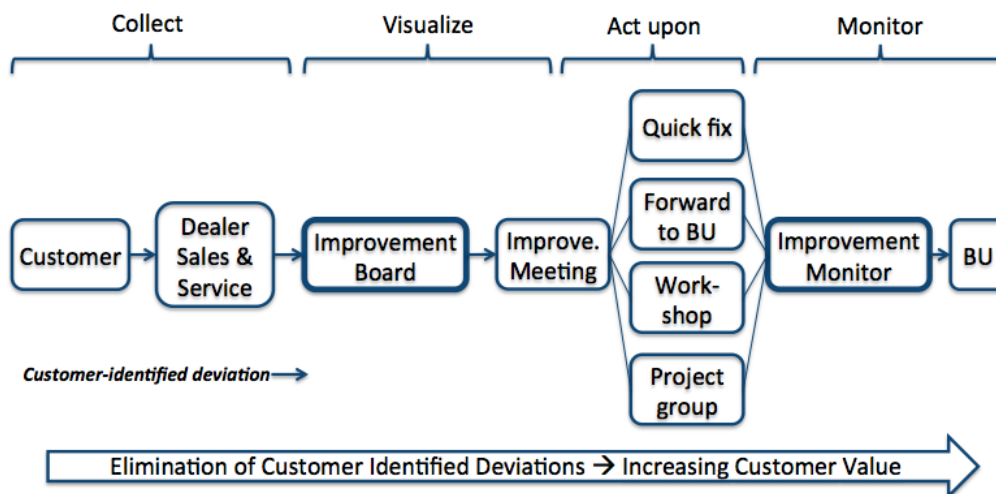


Figure 7 Flow chart of the CVAM method

After having studied theory and the organization and from that developed CVAM, the method was tested and further developed. The result was a “ready for implementation” version. All work performed until here was made with the three research questions in mind. Here they are again:

- What dimensions, aspects and tools should be part of a practical method that enables customer value driven continuous improvements in sales and service?
- How should customer value be defined in a continuous improvement context to fit the method?
- How should the method be designed?

The research questions are answered simultaneously by the final version of CVAM. The next chapter is dedicated to a full presentation of how CVAM is used in the daily work context at a dealer. This presentation describes best the answer to the research question of the master thesis.

6 Results – presenting the CVAM method

6.1 Customer-identified deviations as the source for continuous improvements – applying the CWS philosophy to customer value

CVAM proposes a method for Sales and Services departments to work with continuous improvements by focusing on *deviations* and *potential improvements* that are *identified and experienced* by the end-customer. The method is based on the conclusion that deviations identified by the customer do in fact affect *customer value* negatively. Examples of these deviations are late delivery of a performed service or lacking stock of spare parts. The consequences are that the customer suffers interruptions in the everyday business, which in turn causes loss of sales for the customer, hence loss of customer value.

6.2 How does CVAM handle customer-identified deviations?

CVAM is a four-step method to systematically use customer-identified deviations as a foundation for continuous improvement by **Collecting**, **Visualizing**, **Acting upon**, and **Monitoring** these deviations. The acronym CVAM thereby also corresponds to the four steps of the method. The conclusion from the pilot tests is that by working with the CVAM-method and using customer-identified deviations as sources for improvement, continuous improvements become customer value driven.

Two tools are introduced that support the four steps of the CVAM-method: the **CVAM Improvement Board** and the **CVAM Improvement Monitor**. The two are presented in an example of how the CVAM-method would work on a daily basis below.

6.3 Working on a daily basis with CVAM

To illustrate an example of how customer-identified deviations are processed in the CVAM-method, here follows a storyline of how the CVAM-method would be used in the daily work when fully implemented. Let us introduce a realistic scenario of a customer-identified deviation that could occur when a customer comes in to a dealer to buy spare parts: a *spare part* is out of stock. The spare part is part of the technical stock that consists of essential parts for keeping an industrial product going, and the stock levels must not reach zero.

The customer walks in the door at a Carlson dealer to buy some spare parts for his industrial product. This is a customer that operates 24 hours a day, and needs all his industrial products running constantly, otherwise he will lose revenue. His operation is situated 200 km from the dealer and it takes him 2,5 hours to drive to

the dealer. Some of the spare parts on his shopping-list are in stock but it turns out that spare parts are out of stock. The customer needs to wait two days for the dealer to receive the missing spare parts.

6.3.1 Collecting deviations – in every meeting with the customer

The Carlson service manager Fernando is attentive and listens to the customer's complaint about how the missing spare part affects him. Fernando is understanding, investigative and open towards the customer. He makes sure to understand the customer's perception of how the missing spare part affects the customer's business. Fernando realizes that a deviation has occurred from the customer's perspective.



Figure 8 Collecting customer-identified deviations

6.3.2 Visualizing deviations – using the CVAM Improvement Board

When the customer has left, Fernando goes directly to the **CVAM Improvement Board**. He writes a description of the occurred deviation, the name of the customer and his own name and date on the board.

On every occasion that Fernando and his colleagues identify a customer-identified deviation, they go and write it on the Improvement Board.



Figure 9 Visualizing customer-identified deviations

6.3.3 Acting upon deviations – prioritize, identify root cause, and decide on action

When Fernando and his colleagues have collected and visualized several deviations on the **CVAM Improvement Board**, Fernando gathers to a weekly CVAM-meeting, with a maximum duration of 30 minutes. Personnel attending the meeting are from different sectors (spare parts, service workshop etc.).



Figure 10 Acting upon customer-identified deviations

Prioritize

At the meeting, Fernando (being the service manager) takes the lead in prioritizing the visualized deviations together. The prioritization is based on the frequency of an occurred deviation or a suggestion for improvement and its estimated impact on customer value. The priority is set on a three-degree scale: Red, Orange and Yellow. See the figure below for an explanation.

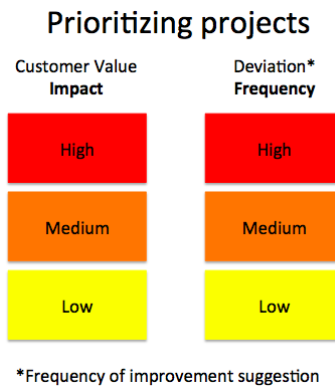


Figure 11 Prioritizing customer-identified deviations

Identify root cause

After having done a rapid prioritization (10 minutes), the team attacks the deviation with highest priority – highest estimated frequency and highest estimated impact on customer value. They together try to identify the root cause of the deviation, in this example the case of missing spare part. Fernando provides his input from having collected the deviation and explains how it has affected the customer. The team uses the “five-whys”-method to identify the root cause. In this case the root cause was identified as lacking internal experience of seasonal demand among all personnel as well as lack of internal communication and coordination.

Decide on action and responsible

The next step is to decide together on an action and assign a responsible. The action could have e.g. four different outcomes:

- Simple quick fix if the problem is easily solved.
- If the root cause were identified to be located at BU, the action would be to communicate the deviation to the Business Unit.
- If the problem were complex, the action would be to hold a CWS-workshop to map and revise an entire process and create an improvement group.
- Lastly, if the deviation requires a larger solution the action would be to create a project, outside CWS.

6.3.4 Monitoring deviations – using the CVAM Improvement Monitor

After the meeting, Fernando goes to his office to communicate the events from the CVAM-meeting. He opens the CVAM “Improvement Monitor”, which is an intranet module available for managers at all dealers and at the Business Unit. In the Improvement Monitor, Fernando enters data about the deviations that have been given actions at the CVAM-meeting. To minimize the level of administration he only enters the deviations that have been given an action, due to their high priority.

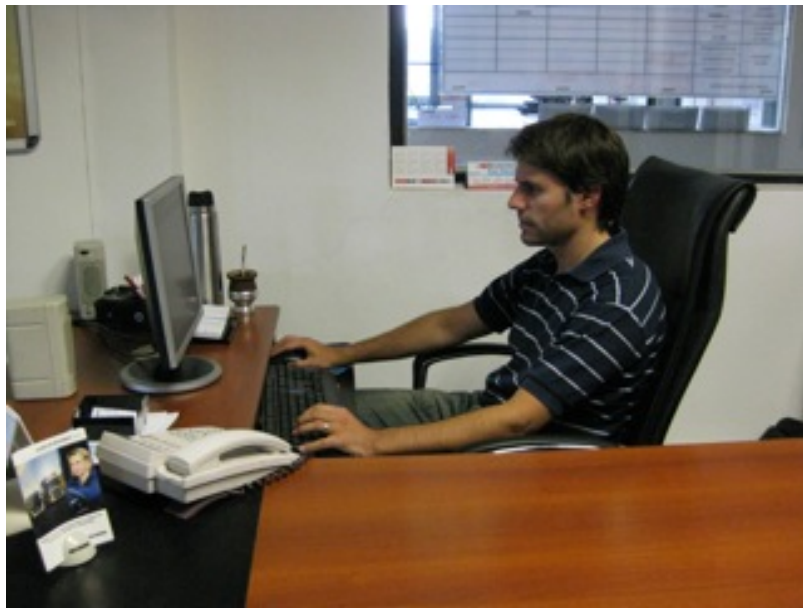


Figure 12 Monitoring customer-identified deviations

In the case of the spare part, Fernando completes the empty areas as previously done on the Improvement Board and categorizes the deviation into the process that the deviation belongs to. This example is shown in the picture below of the prototype of the CVAM Improvement Monitor.

	A	B	C	D	E	F	G	H	I	J
GC Improvement Monitor										
On-going SRS projects										
Description	OPC/A3	Pulse status								
Develop a method for collecting debt faster	Link to OPC/A3	Link to Pulse Report BU (see attached file)								
On-going improvement projects										
What?	Why?	How?	Who?	Pulse status						
Refurbishing and improving the office layout	Improve customer's impression and work together with working environment	Hire carpenters that work together with Scania Facilities	José A. Mannucci	Link to Pulse Report Cordoba						
Rooted at BU										
Description (deviation/improvement)	Customer(s)	Reported by	Date	Frequency	CV affection	Root cause (five why)	Action	Pulse status	Comment BU	
Fictive ex: The salesmen needs laptops		Carlos Naval	2011-03-31			Decision taken by BU 2007	Communicate to BU	Link to Pulse Report BU	Any specific needs	
Processed deviations/improvements										
Description (deviation/improvement)	Customer(s)	Reported by	Date	Frequency	CV affection	Root cause (five why)	Action	Process		
Lacking stock of water pumps - deficient technical stock		"Rodríguez Transport"	Fernando Bustamante	2011-03-31		- the water pump had not been ordered - not enough PGR - lack of information about demand - lack of experience about demand - internal communication	Created an improvement group and A3	Spare part sales		
Completed projects and Best practices										
What?	Why?	How?	Who?	Type	Best practice					
Magnetic name tags to use when a mechanic takes a tool, so that his colleagues knows where to get it.	Tools were hard to find when needed by several mechanics	Produced our own name magnetic name tags	Fernando Bustamante	Quick fix	Yes					

Figure 13 The CVAM Improvement Monitor

After having entered the data, it is available for all dealers and managers at the BU to access via the company intranet. If the deviation had had its root cause at the BU, Fernando would have copied the deviation into the area in the middle, "Rooted at BU". Then the national CWS-coordinator will have the possibility to collect deviations to be handled with the CVAM-method at the BU. The CWS-coordinator can leave comments on the right about the status of handling specific deviations. Fernando can thereby follow-up on the advancement of the deviations that he has communicated to the BU.

The Improvement Monitor enables measurement of the deviations both locally at dealers, and at a strategic level at BU and regional Headquarters. The measurement enables follow-up on communicated deviations – what is being done about the customer-identified deviations in order to follow-up towards the customer as well. The result of this measurement is the indication of how the company is performing on improvements and thereby customer value. The availability of access for all dealers and managers at BU enables to identify "best practices" between dealers.

Key benefits of the CVAM Improvement Monitor

- Local measurement of improvement performance at dealers
- Reduces risk of duplicated projects and waste of resources
- Best practice identification
- Dealers have access to BU activity to follow-up communicated deviations
- Measurement to prioritize improvement efforts at national level

7 Discussion

7.1 Theoretical implications

The thesis is believed to provide a more profound definition and understanding of customer value in a continuous improvement context. This, by letting the use of customer-identified deviations as sources for continuous improvement bridge customer value and continuous improvements. CVAM forms a systematical way of managing and eliminating customer-identified deviations throughout the organization, and thereby add customer value. The idea faces challenges in typical lean organizations, where the improvement efforts tend to be more focused at the shop floor than at the customers. (Hines, 2004) The message is *not* to stop doing internally oriented improvements and to stop listen to what the organization believes customer wants. The message is to *add* the customer dimension to the work on continuous improvements, by letting customer feedback complement the organizations view on what customers want and need, for increased customer value accuracy of improvements.

By using customer-identified deviations as a bridge between customer value and continuous improvements, an illustrative and tangible way of theoretically dealing with the question of how to obtain customer value driven continuous improvements, is built up. This, forming, from the authors' point of view, a generic perspective to address this topic in the services field, no matter type of industry or organization.

7.2 Practical implications

The report introduces the Customer Value Assessment Method (CVAM), a practical method for working with continuous improvements in sales and service processes. CVAM can, more in detail, be seen as a deviation management and failure report system for sales and service processes that enables solving the customers' problems at multiple levels in an organization.

The overall win of using the method is that the value as defined by the customer is being integrated into the improvement work, which in turn enables customer value driven continuous improvements in sales and service processes. CVAM is supposed to complement the continuous improvement philosophies by embodying the concept of them and forming a practical method to use in the daily work by collecting, visualizing, acting upon and monitoring deviations and improvement suggestions that are identified by a company's customers. Applying the CVAM method gives sales and services organizations a way to put this idea in practice.

Developing the CVAM method also enables to answer the “how” in: the value of listening to customers when developing businesses seems to be quite obvious, but the question is *how* to put it in practice.

7.2.1 Wins in the long run

Successfully applying the CVAM method in an organization, and thereby obtaining a systematical way to integrate the customer into the improvement work is believed to result in positive effects on the organization’s overall performance and competitiveness. The organization will be able to in a systematical way collect information from customers to be basis for developments and improvements that really need to be done, as they would have direct impact on customers’ business operations. This will in turn be a way to possibly increase customer satisfaction and through that increase sales, assumed that customer satisfaction does have impact on the customers’ willingness to buy more products and services.

The organization is enabled to better handle the risk of investing money in improvements that do not affect the customer, or at least affect customer value less than a customer value driven improvement would. Another effect would be that the reduced number of deviations will in turn decrease loss of sales – the number of times when customers that cannot wait for a missing spare part and needs to go somewhere else to get it will be reduced.

By successfully managing to be truly engaged in the customers’ expressed needs and by systematically collecting customer feedback, the authors’ belief is that competitiveness of the organization would strengthen.

7.3 Limitations

First of all, as further discussed in 7.4, the CVAM method needs further testing to ensure that the customer’s voice is interpreted correctly and measurements of customer satisfaction need to verify CVAM’s positive effects, maybe via a specific customer survey.

Even though CVAM is developed to cover all aspects related to customer integration into continuous improvement work, there are some known limitations and issues of the method that needs to be illuminated. Most of them are in line with the delimitations of the thesis concerning the organizational aspects.

A central issue is that, even though CVAM is a practical and easy-to-use method supporting lean, nothing will improve if it is not used. Hence, the main challenge is to successfully incentivize people to start using CVAM continuously in their daily work. Another issue to deal with – during the research it was found that regardless of CVAM, the organization needs to allocate human resources for coordination of

the improvement work, at both dealer and BU level. People in the organization can and should perform the improvement activities, but coordination and follow-up is time consuming and requires someone responsible. At dealer level, people are supposed to meet customers or work on their industrial products all day. However, to successfully drive continuous improvements, conclusions from the case study were that someone, at every dealer location, needs to have the overall responsibility of coordinating the work with CVAM.

What is crucial is that the organization has reached at least some level of lean maturity. However, since the message is "list problems occurred in your daily work on the Improvement Board and we will act on them together", the method will be quite easy to understand despite employees are not fully educated on lean. The key is engagement. People will learn by doing, *if* they are incentivized and clearly do see better results coming out of their work, when using the method.

A rather complex limitation to deal with is the method's lack of a systemized way to treat the risk of sub-optimization and tradeoffs between cost and quality. An argument that probably will come up during decision making on improvement project is: If we decide to fully satisfy our customers in this specific service aspect, it will cost us more than we can earn back, if the price is not increased. So, tradeoffs between customer and business value will need to be handled. In some situations it is probably possible to compromise. Imagine that the organization finds out that it will be too costly to guarantee all their customers 24 hour up-time by e.g. offering loaner industrial products when the customers' industrial products are in the service workshop. Then maybe a special insurance can be offered to customers that really do value such a guarantee, and are willing to pay for it. Therefore, what maybe should be added to the CVAM method is an extra prioritizing criterion, regarding cost versus quality tradeoffs, or customer versus business value.

The aim of using the CVAM method is to help the organization in decision-making on improvement projects, by in a systematical way adding the customer perspective, to increase the accuracy of the improvement work, regarding customer value. To concretize this, imagine a decision between improved financial offerings or optimized stock levels through improved demand forecasts. When looking at collected customer feedback, what seems to be most crucial: missing parts in stock or better financing solutions? The business value aspect related to these decisions must not be forgotten, as stated above, and if business value is not actually directly increased as a result of the improvement, it should at least stay unchanged. Hence, in the long run, by providing services with higher customer value, the aim should be increased business value in terms of e.g. increased sales.

Another limitation of the CVAM method is that it does only support collection of deviations that are communicated by the customers. Customers that are not willing to communicate negative feedback for some reason will not be integrated into the

improvement work. The important thing here is the organization's openness towards its customers, and their ability to stimulate customers to express their real opinion.

7.4 Suggestions for further research

The CVAM-method should undergo further testing, evaluation and then further development. Regarding the method's level of generality, it should be tested at other lean organizations and in other contexts, but always maintaining the perspective on customer value driven improvements. The method also adds a theoretical concept for dealing with customer value in a continuous improvement context, by bridging those two with customer-identified deviations. This linkage should also be further researched, is it applicable in other types of businesses and is it really the most fruitful way of dealing with this? Also, the organizational aspect of working with these methods could be investigated in the change management field, as being one the central challenge when implementing CVAM is to make people start using it in their daily work. Another, interesting topic for further investigation, is to explore how other lean organizations are arranging their integration of the customer perspective, or if they are at all. What also is not treated in the thesis is the implementation aspect for CVAM; how to successfully implement such a method? A lot of these issues belong in change management and organizational theory. However, what the authors believe profoundly is that more cross-scientific research initiatives such as this thesis are needed to increase the understanding of working with continuous improvement to increase customer value.

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Interviews

Customer interviews were performed with eleven (11) customers on location at Dealer 3 between 2011-03-14 – 2011-03-25

Industrial Researcher (2011), Carlson Sweden, telephone interview, 2011-02-01

Marketing Professional (CAR, 2011), Carlson Argentina S.A. (CAR), personal interview, 2011-02-17

Marketing Representative (2011), Carlson Sweden, telephone interview, 2011-02-01

Organizational Development Representative (2011), Carlson Sweden, telephone interview, 2011-02-08

Sales Manager, Dealer 1, personal interview, 2011-02-18

Sales Manager, Dealer 2, personal interview, 2011-02-22

Sales Manager, Dealer 3, continuous personal interviews, 2011-03-01 – 2011-03-25

Service Director (CAR, 2011), Carlson Argentina S.A. (CAR), personal interview, 2011-02-17

Service Manager, Dealer 1, personal interview, 2011-02-18

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Service Manager, Dealer 2, personal interview, 2011-02-22

Service Manager, Dealer 3, continuous personal interviews, 2011-03-01 – 2011-03-25

CWS-Coordinator (CAR, 2011), Carlson Argentina S.A. (CAR), continuous personal interviews, 2011-02-15 – 2011-03-01

9 Appendices

9.1 Interview questions for dealer

Introduction

The interview is part of a project developed at the Carlson Business Unit within Carlson Wholesale System (CWS).

Why?

It is a stage in the development of our methods of working with improved sales processes and services throughout Carlson Argentina SA, to make them more customer-oriented final.

Structure of questions

We would like to hear your opinion on how we can improve all areas and activities in the Business Unit processes from the perspective of the dealers in the network of Carlson. To enforce the importance of your needs, we would like to know how improvements of our processes would add value to the end-customer. The key questions are:

1. What can we improve in our processes throughout Carlson from your perspective?
2. Why should we improve it from your perspective?

Please answer the questions initially. Then look at the guide below to express your opinions in precise manners. The duration of the interview is approximately one hour.

This area contained the definitions of different processes at the case company. They are not disclosed for integrity reasons.

9.2 Interview questions for end-customer

Introduction

The interview is part of a project initiated by Carlson Argentina S.A. as an initiative to improve Sales and Service processes, in an even more customer oriented way. With the answers the objective is to:

- increase understanding of how improvements in our sales processes and services could affect / add value to our customers' businesses

Structure of questions

We would love to hear your opinion of what we can improve in all activities of our processes in Carlson from your perspective as a customer. We hope that we can better understand your customer needs. We would also like to know if you remember any deviation from what was promised during your time as a customer.

1. What can we improve our sales processes and services throughout Carlson from your perspective?
2. Why should we improve it?
3. Do you remember a deviation from what was promised by Carlson during your time as a customer?
4. How did that deviation have impact on your business?

The areas below constitute a guide to the customer if you have difficulty in expressing yourself in a precise manner. The duration of the interview is approximately 15 minutes.

This area contained the definitions of different processes at the case company. They are not disclosed for integrity reasons.