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June 2015

# Circular Return Strategies for the Indian Dairy Market

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The Customer Attitude towards Product Return Models  
and Recovered Components

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Circular Return Strategies for the Indian Dairy Market – The Customer Attitude towards  
Product Return Models and Recovered Components

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Printed in Sweden

# Preface

This master thesis was conducted in collaboration with a case company during the spring of 2015. It is our final academic project and ends our master degree in Industrial Engineering and Management at the Faculty of Engineering, Lund University. The master thesis project has helped us gain insights into the manufacturing industry and it has been very rewarding to apply the knowledge gained during our university studies on a project conducted at a case company. Many important insights were gained from the project and it was the perfect way to end our time at Lund University.



# Acknowledgement

We are very happy for the opportunity to perform our master thesis at the case company and we are grateful for the chance to study the area of circular economy in a company context. We would especially like to thank our case company supervisor for all his encouragement, patience and words of wisdom. Furthermore, we would like to acknowledge all the interviewees at the case company that contributed to the project with their knowledge.

Special thanks are also given to Martin Twedmark, Manager for Core Management at Volvo Group Truck Operations, and Christian Johansson, former Logistics Manager at Volvo Parts AB, that with enthusiasm shared their experiences from circular return strategies, which improved our understanding of the area.

Moreover, we would like to thank our academic supervisor, Bertil I Nilsson, for his guidance, support and important feedback through out the project. Finally, we wish to acknowledge our opponents, Angelika Jansson and Linnea Karell, who have given us valuable feedback and assured the quality of our master thesis – thank you very much for your help and support.

Lund, June 2015.

*Sophie Bjellerup & Linnéa Kraft*



# Abstract

|                   |  |
|-------------------|--|
| <b>Title</b>      | Circular Return Strategies For The Indian Dairy Market<br>- The Customer Attitude Towards Product Return Models and Recovered Components   |
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| <b>Supervisor</b> | Bertil I Nilsson<br>Department of Industrial Management and Logistics<br>Faculty of Engineering, Lund University   |
| <b>Background</b> | Companies producing premium products with high quality and long product life can experience challenges when trying to penetrate price-sensitive customer segments on emerging markets due to a high product price. One way to achieve growth in these segments is to introduce new innovative business models. From the theory of circular economy, a concept combining sustainable and economical growth, innovative circular business models exist. The question has been raised if these business models can be used to help durable premium products to reach price-sensitive customers on emerging markets. |
| <b>Purpose</b>    | The purpose of the project is to develop a business model aiming to increase the case company's market share of dairy processing components on the Indian market while maintaining their position as a high quality brand.   |

**Methodology**

The project is performed as a case study in collaboration with a case company and therefore the research approach is qualitative and the research purpose is exploratory. However a market analysis of the Indian market is conducted and for this reason the purpose is also descriptive. Secondary data regarding the theory behind circular economy and the Indian market is collected through an extensive literature review. Primary data is mostly gathered through a number of interviews with the case company's employees providing insights to the case company's operations on the Indian market and knowledge about their customer base.

**Conclusion**

The recommended circular return strategy for the case company includes the product return models leasing, trade-ins and products repurchase and product recovery by either refurbishing or remanufacturing are most suitable for the case company. Indications show that this business model is a possible way for the case company to take market shares on the Indian market. In particular, private Indian companies with medium to high capacity can be receptive for circular return strategies. Furthermore, it could give the case company a competitive advantage since no similar business models are currently used on the Indian dairy market. The availability of CIP components to recover is currently the largest obstacle from the customers' point of view. However, before implementing of circular return strategies their suitability need to be evaluated from the company's perspective and factors such as reversed logistics, organizational mindset and costs need to be taken into consideration.

**Key words**

Circular economy, circular business models, recovery options, product return models, Indian dairy market, growth strategies, emerging markets



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# List of Acronyms

|       |   |
|-------|---|
| B2B   | Business-to-Business                              |
| BU    | Business Unit                                     |
| CIP   | Cleaning In Place                                 |
| FDI   | Foreign Direct Investment                         |
| GCMMF | Gujarat Cooperative Milk Marketing Federation Ltd |
| MNCs  | Multi National Corporations                       |
| NDDB  | National Dairy Development Board                  |
| NDP   | National Dairy Plan                               |
| NFDM  | Non-Fat Dry Milk                                  |
| NGOs  | Non Government Organizations                      |
| OEMs  | Original Equipment Manufacturers                  |
| SI    | System Integrators                                |
| TCO   | Total Cost of Ownership                           |



# Disposition of the Master Thesis

In order to gain an overview of the master thesis, this sector provides the reader with a short disposition of the report. The master thesis is divided into different areas, which are described shortly below. Furthermore, the reader is provided with some guidance regarding how to read the report in order to make the process more efficient.

The two initial chapters contain the introduction and the methodology used during the project. Chapter one introduces the reader to the project through a background and problem discussion ensuring that the reader understands the underlying motive for the project. Chapter one is recommended to all readers in order to understand the context of the project. The methodology chapter explains the relevant theory behind the project plan and the choice of method is explained. The second chapter is recommended to readers with academic interest but is not seen as crucial for readers primarily interested in the case studies.

The findings of the conducted literature review are presented in chapter three and four, where the former focuses on circular economy and the concept of circular return strategies and the latter presents India in general and in particular the Indian dairy market. Both of these chapters provide the reader with an extensive theoretical platform but are not crucial to grasp the result of the project.

The empirical data collected during the project is concluded in chapter five and six. The case company's operations and customer segments are described in detail. Furthermore, several circular return strategy cases are presented in order to gain an understanding for the challenges and advantages with circular return strategies in real-life business cases. The reader is recommended to read both chapters as they are deemed to be crucial parts of the project affecting the recommendation.

The analysis and given recommendation to the case company is presented in chapter seven and eight. The seventh chapter contains the main analysis and combines findings from the literature with the empirical data. Furthermore, the reflections made based on the empirical data are brought together to get a holistic picture of viable options for the case company.

Based on this analysis the case company is given a recommendation and a proposed action plan in chapter eight. Both chapters are highly relevant to the case study and are recommended to all readers.

In the ninth and final chapter the project is summarized by concluding answers to the posed research questions and a credibility analysis of the project and its results. Lastly, the academic and practical contribution of the project is provided and recommendations for further studies are given.

# 1 Introduction

*In this chapter the project is introduced by presenting the background, the nature of the case company and the underlying problem discussion. Furthermore, the purpose of the project and the posed research questions are explained. This sector also includes the scope of the project, the expected result, and the deliverables.*

## 1.1 Background and Problem Discussion

In today's society there is an increasing demand for organizations and products to become more sustainable. This is a consequence of environmental issues becoming more emphasized through regulations, Non Government Organizations (NGOs) and a more informed customer base. This development puts pressure on companies' environmental activities and has led to a sustainability trend resulting in more active corporate social responsibilities policies. (Quisenberry, 2012) However, the question is raised if today's incremental approach to reduce the environmental impact is enough and therefore a theory called circular economy has gained recognition. (Greyson, 2007) A circular economy significantly differs from today's linear take-make-dispose economy where products are produced, consumed and then thrown away, as the concept is based on the importance of reducing, reusing and recycling. In a circular economy waste does not exist. The waste is seen as a resource and used as input in order to close the material loops and hence result in a sustainable development. (Ellen MacArthur Foundation, 2012a)

To achieve a circular economy, companies need to develop circular business models where the product's end of life is considered already in the product development phase. In a circular business model a company looks at the entire cycle from choice of material to waste management. As a result of multiple uses, extended life cycles and increased use of biodegradable materials the existing strong relation between economic growth and resource usage can be broken. (Accenture Strategy, 2014) Many Multi National Corporations (MNCs) such as IKEA, H&M and Unilever show interest in a transition towards a circular economy and are members of the program *Circular Economy 100*, which is a network aiming to accelerate the shift to a circular economy. (Ellen MacArthur Foundation, 2012b)

Advocates for a circular economy stress the financial benefits, in addition to the environmental advantages, that can be obtained with circular business models. Preston (2012) concludes in his research paper: “the circular economy offers a strategy for value creation, growth and competitiveness that will become increasingly compelling against a backdrop of high and volatile resource prices.”

Environmental conscious companies producing premium products with high quality and long product life can experience challenges when trying to penetrate price-sensitive customer segments on emerging markets due to high product price as they do not want to compromise quality. Joustra, Jong and Engelaer (2013) concluded that more price-sensitive customer segments could be reached by initiating multiple product lives, see figure 1.

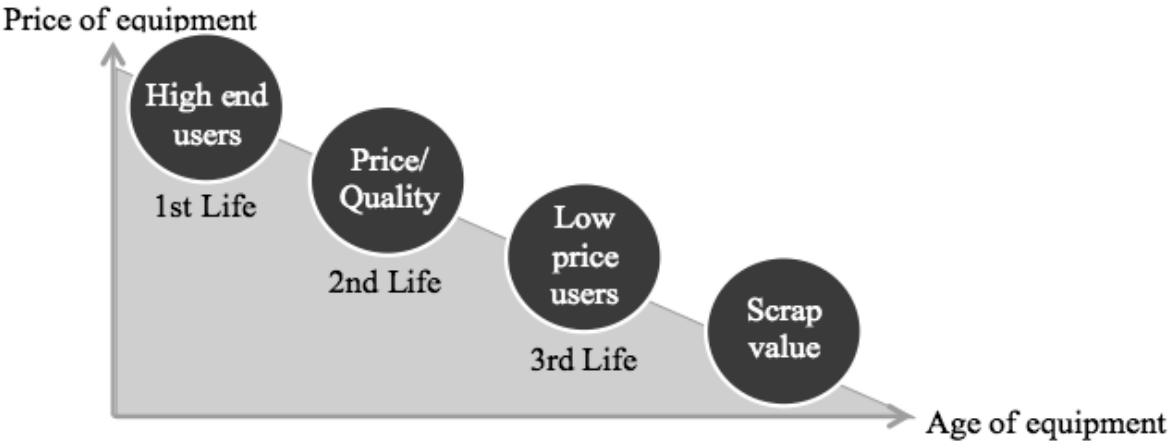


Figure 1. The price of equipment is lowered during the product life, adopted from Joustra, Jong and Engelaer (2013).

The implementation of a circular business model can reduce the product price, during the second and following life cycles, and simultaneously reduce the environmental impact. This raises the question if the use of circular business models can be a way for environmentally conscious companies to enter price-sensitive, emerging markets, without compromising the product quality.

Ravi Venkatesan, former chairman of Cummins India and Microsoft India, argues in his book *Conquering the Chaos: Win in India, Win Everywhere*, that if a company succeed in the Indian market they will be able to grow their business in any emerging market. The reason is that the business environment in India, being volatile, uncertain and complex, resembles many

other emerging markets in Africa, Latin America and Asia (Venkatesan, 2013). For this reason the project will investigate if circular business models can lead to growth opportunities on the Indian market.

To make this study more reality-based, case studies are performed, see chapter 6 *Cases and Examples of Circular Return Strategies*. The main case study is performed in collaboration with a manufacturing company working in the dairy-processing sector. The case company is an example of an environmentally conscious company that is experiencing a challenge when expanding to price-sensitive markets. This project is initiated in order to identify opportunities to increase the market share for components on the Indian market while retaining the case company's position as a high quality brand. The case company stresses the importance of high quality and extensive product specifications. As a result of costly advanced technology and high quality components the case company experience challenges in offering competitive prices in India (DC, 2015; RM, 2015) In this project the suitability of circular business models as an approach to reach the price-sensitive Indian customers will be evaluated mainly from a market perspective meaning that the customers' acceptance is examined.

## 1.2 Purpose

The purpose of the project is to develop a business model aiming to increase the case company's market share of dairy processing components on the Indian market while maintaining their position as a high quality brand.

## 1.3 Scope of the Project

For the component investigated in this report the greatest business opportunities within a circular business model are found within product recovery, allowing multiple use and an extended product life. In this project a business model extending the product life by allowing multiple life cycles by using products return models and product recovery has been developed and has been named circular return strategies. Therefore the project is only focused on one particular step in a circular business model; the loop that is defined as circular return strategies in this project. This is one of the greatest delimitations in the project and therefore a definition of the business model called circular return strategies will be presented.

Circular return strategies have been defined as a business model consisting of strategies needed to complete the last loop: from the customer to the company and back to the customer again. The strategies needed to close the loop are; financial models, product return models and recovery options. Depending on the business context and the companies capabilities the suitability of different options *within* respectively activity variee. Therefore alternatives within each activity have been studied. In circular return strategies, used products are returned to the company for recovery in order to allow a second use of the product.

A circular return strategy can be divided into three steps. The first step is the return of the product, which may be obtained by product return models such as leasing, rental, trade-ins and guaranteed repurchase price. The second step is the recovery of the used product and the third step is the reuse of the recovered components. The loop that is completed by a circular return strategy is shown in figure 2. Circular return strategies as defined in this project are only one part of a complete circular business model since it only takes the final loop into account and do not take factors such as product design or material choices into consideration.

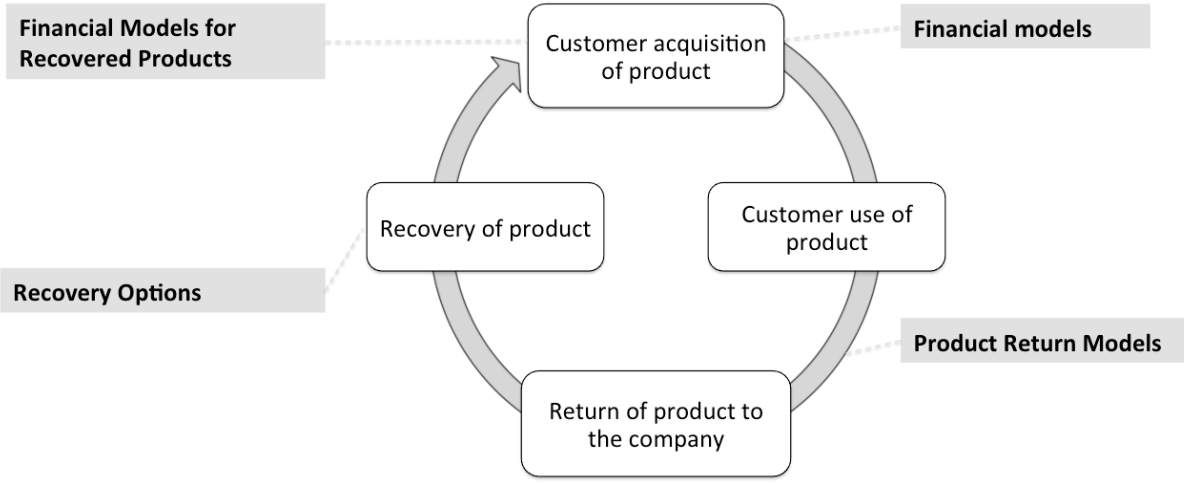


Figure 2. Circular return strategies are the strategies needed to successfully complete the loop. Choices regarding financial models, product return models, recovery options and financial models for recovered products need to be made to create a circular return strategy.



For this reason an investigation for other areas of circular business models such as the product design and the choice of product components is not conducted within the scope of this project. The circular return strategies applicability to the Indian market is assessed from a market perspective meaning that the customers' acceptance for the business model is examined.

Recovery models such as refurbishing and product remanufacturing are presented in the project and the demand and acceptance for recovered products on the Indian market is investigated. In particular the customer attitude towards recovered components is evaluated. Consequently, the possibility for using a recovery model is assessed, but the organizational factors influencing the decision regarding the choice of recovery model is not determined.

The scope of this project includes analysis of the Indian dairy market. Furthermore, knowledge regarding the customer attitudes towards circular return strategies are examined to evaluate if the use of these kinds of models can be a potential way for the case company to increase their total market share on the market. Hence, this project is focused on the Indian market company's customers for components and therefore no general conclusions can be drawn. The study is performed from a market perspective and customer segments where potential growth is expected in the coming years are identified. The growth potential is not delimited to sales of new equipment but total installed base and services.

A deeper analysis of how the case company can implement circular return strategies is not investigated within the scope of this project. The study should be seen as an initial study examining the potential for circular return strategies from a customer perspective and could work as a basis for future development of a more distinct action plan. Within the scope of the project, estimations of costs and revenues associated with the different option are not covered.

The number of cases that are used in this study is limited to one external case performed with the vehicle manufacturer Volvo Group and several internal cases within different market companies and BUs at the case company. The selection of the cases was based on different factors. The external case with Volvo Group was chosen since Volvo Group, just like the main case company, offers durable products that often are perceived as expensive on emerging markets. Furthermore, Volvo group was chosen since they have experience in business models using thought from circular economy and have also investigated the

profitability of using these models on the Indian market. The internal cases were performed with units of the organization that have been using activities that are used in circular economy. Since insights from two companies do not represent the entire market place it is a limitation to the result and the conclusions that can be drawn about the Indian market.

## 1.4 Research Questions

With the scope of the project in mind, three research questions are asked to divide the purpose into different sectors facilitating the project's procedure. The combined answers to the research questions will address purpose of the project. In order get an overall understanding for the Indian market an analysis of the Indian market and the Indian dairy market are conducted. The knowledge gained from the market analyses will improve the answers of the research questions. The research questions and how they are related are the following:

**Research question 1:** How can the Indian dairy processing customers be segmented and what values and requirements affect their investment decision?

The first research question investigates if customer segments exist on the Indian market. Furthermore, the factors affecting each customer segments' investment decisions are identified in order to gain understanding for the customer demands to assess if these can be satisfied with a circular return strategy.

**Research question 2:** Are circular return strategies acceptable among the case company's customers on the Indian dairy market?

The second research question evaluates the Indian customers' acceptance of different circular return strategies. The customer attitude towards different recovery options is investigated for the identified customer segments as well as the customer requirements on recovered products and the suitability for different financial models such as leasing, trade-ins, pay-per-use etc.

**Research question 3:** What are the benefits and challenges with circular return strategies for the case company on the Indian market?

The third research question identifies what advantages and disadvantages the case company could experience by introducing circular return strategies for their components on the Indian market. The answer of the research question will be useful in order to evaluate if the approach could be a successful way to achieve increase market shares.

## 1.5 Expected Result

During this project a number of results will be achieved. To begin with, suitable market segmentation is performed and values and requirements for the segments are identified. Secondly, as a result of the market analysis of the Indian dairy market future development possibilities will be presented. Thirdly, and foremost, the main result is to find out if the Indian customers accept circular return strategies and if it could present an opportunity to increase the case company's market share. The last result is expected to be a recommended action plan for how the case company could proceed with the development of circular return strategies as a way to increase their market share on the Indian market.

Furthermore, the study will contribute to the academia by further investigate the topic of circular economy and the customers' view of circular return strategies. The report will illustrate how thoughts from circular economy can be used to enhance the market position of a premium brand on a price-sensitive emerging market without compromising the product quality. This is a contribution to the academia as there is today limited research about circular economy as a tool to expand on emerging market.

### 1.5.1 Deliverables

The main deliverables from this project is a report and two verbal presentations. Other deliverables from this project consists of a summary with the factors affecting the customer segments' investment decision, a table illustrating possible future developments of the Indian dairy market, a model with the customer requirements on recovered products, the case company's possibility and challenges related to these requirements and a recommended action plan for the case company. Furthermore, the model defined in this project, circular return strategies, is illustrated both in general and how it is best applied to the case company.



## 2 Methodology

*The following chapter presents the available methodology relevant for this project. Each sector discusses theories about methodology and then evaluates and justifies the choices of methodology made in this project. The research approach, purpose and strategy are explained and the working process used is described. Moreover, the data collection and analysis method is introduced along with how to guarantee the validity and the reliability of the project. Since the project is primarily focusing on the case company and its operations on the Indian market it is executed as a case study and empirical data is collected.*

### 2.1 Research Approach

There are two main types of methods that can be applied when performing a research: qualitative and quantitative methods. The fundamental difference between these two methods is how gathered information is analyzed. A quantitative study uses numbers and statistical facts to explain situations and behavior. A qualitative research, on the other hand, uses words to explain phenomena and patterns and in many ways presents the researcher's interpretation of the data. Depending on which of these two approaches the researcher wishes to use this will influence how the project is planned and conducted i.e. the data collection and analysis methods will vary. (Hancock & Algozzine, 2011)

Qualitative research is the approach most suitable when conducting a case study since the process matches the framework setup for qualitative studies best. (Hancock & Algozzine, 2011) It is a less formal approach and observations are allowed to be unstructured and unsystematic which is preferable since in-depth information needs to be gathered to gain an understanding of the case situation. (Yin 2003)

In this project a qualitative research approach is used since in-depth understanding needs to be gained. However, information might not always be gathered in a systematical way. The results are presented in a report where the interpretation of the case situation and insights gained from literature and collected empirical data are presented. The qualitative approach is also preferable since non-quantitative perspectives of the Indian dairy market and the case company's business are reviewed.

## 2.2 The Working Process

It is common to plan the working process based on a number of activities. According to Yin (2003) a case study research is a linear but iterative process consisting of the parts: plan, design, prepare, collect, analyze and share. The case company also performs projects according to a linear working process: initiate, analyze, design, plan, develop and implement. (RM, 2015) With these two frameworks in mind a plan for the working process was developed, see figure 3. During the project this process is used in a linear but iterative way as suggested by Yin (2003). Different areas of interest are examined in parallel but can be at different stages of the working process.

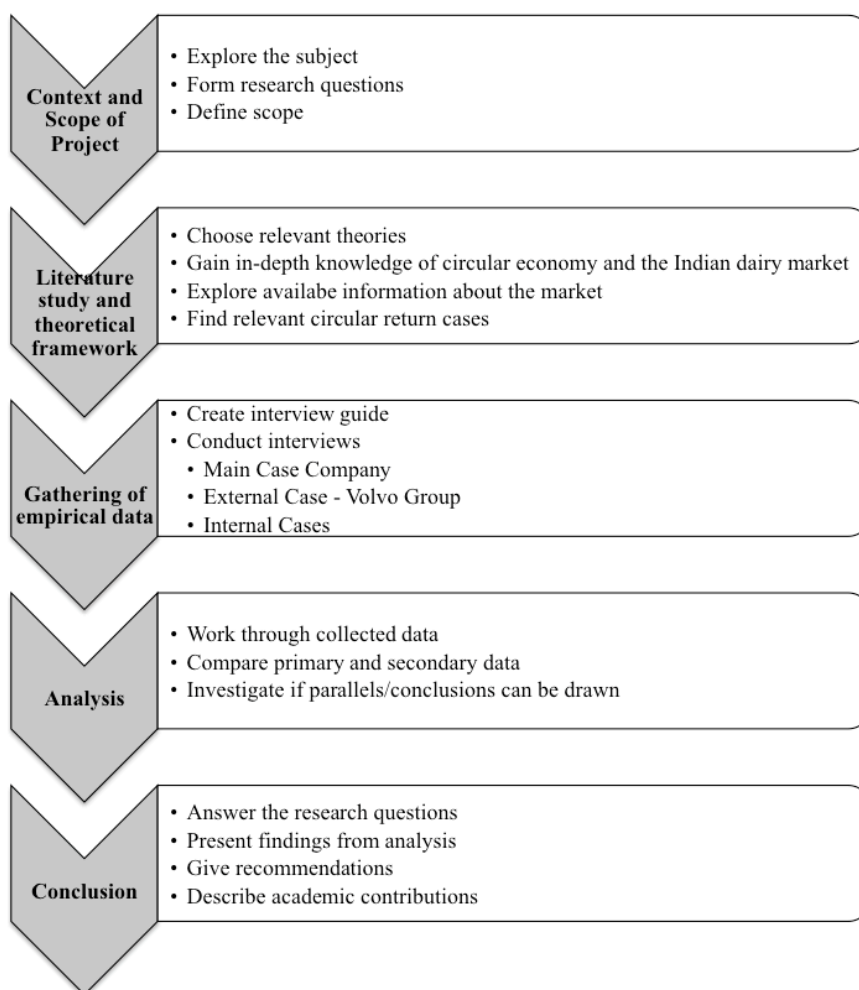


Figure 3. The working process used during the project.

## 2.3 Research Purpose

Once the research questions, scope and boundaries are set, it has to be decided what type of case study that should be used in the project. There exists three different types of case study designs and the nature of the overall purpose of the project will determine which type is most suitable (Baxter & Jack, 2008). Yin (2003) states that a case study can have different research purpose. It can be explanatory, exploratory or descriptive. Furthermore, Yin differentiates between multiple-case studies and single, holistic case studies. The research purpose is explanatory if the case study aims to explain complex links that are presumed to exist between real-life events. The explanatory research is focused on using existing theories and knowledge to explain phenomena and situations. If the research purpose is exploratory, the main activity is to collect as much information as possible about a specific phenomenon and provide several different perspectives. Often this area is relatively new and undiscovered and the exploratory research aims to provide guidelines for future studies. The exploratory case study is appropriate when the situation being explored does not have a clear outcome. The research purpose is descriptive when a case study aims to describe the real-life context in which a phenomenon occurs. There often exists a certain amount of information expressed as theories and models and the researcher wishes to highlight certain aspect to investigate how they can relate to the situation. This can result in some detailed facts and more importantly; the conclusion reflects all examined variables and aspects. (Yin 2003)

The project's research purpose is both exploratory and descriptive. It is exploratory since the main focus will be to collect a vast amount of information to understand different perspectives, of different sources, in order to address the research questions properly. Even though the area is not undiscovered the project will provide guidelines for further studies. The result from the circular return strategies and the cases has an unclear outcome, which makes the exploratory research purpose an appropriate approach. In addition, a market analysis of the Indian dairy market is performed and therefore the research purpose is also descriptive.

## 2.4 Research Strategy

Within the two main research approaches there exists a large variety of different research strategies and each include its own way of both collecting and analyzing empirical evidence. Common research strategies are according to Yin (2003): experiments, surveys, analysis of archival information, histories and case studies. Each method has advantages and disadvantages depending on three different factors; the nature of the research question, the amount of control the researcher has over actual events and whether the focus is on contemporary or historical phenomena. (Yin, 2003)

For a case study to be a suitable research strategy, a number of factors should be considered. This is a recommended strategy if the research questions focus on present situations and the researcher has little control over behavioral events. The contextual conditions are relevant for the phenomenon and should therefore be covered by the study. Furthermore, the boundaries between these two are not always clear. (Yin, 2003) Case study is a strategy that allows exploration of an area or a phenomenon within a context using multiple sources. By ensuring a wide variety of sources the research questions can be viewed from different angles, which can help insure the validity and reliability of the presented conclusions. (Baxter & Jack, 2008)

Since the scope of the project covers many of the factors mentioned above, a case study is chosen as an appropriate research strategy. The research questions focus on a present situation where the contextual conditions are highly relevant for the case situation. The structure of the Indian dairy market and the case company affects the possibility for implementation of circular return strategies and there is no control over behavioral events during the project. A large number of different sources both from literature and internally within the organization will be used to ensure different angles are covered and that the conclusions are reliable.

## 2.5 Data Collection Method

When conducting a case study some overriding principles are important in order to ensure that the case study is substantial and of high quality. These are including the use of multiple sources, a collection of information and evidence for the specific case. Also a clear chain of evidence, meaning there should be a connection between research questions, the data



collected and the conclusion should be presented. The data used in a case study can come from a number of different sources including documents, archival records, interviews, direct observation, participant-observation and physical artifacts. However, even though these are the most commonly used data sources, other sources may be of interest as well such as videotapes, films, photographs, life histories etc. Each of these mentioned sources has advantages and disadvantages and no single source is superior over the others. The use of several different types of sources is recommended when conducting a case study. The different sources' strengths and weaknesses can be viewed in table 1. (Yin 2003) It is preferable to use several different types of data sources and Perry (1998) states that a literature review providing theory, some initial frameworks and knowledge can help focus the data collection phase. One of the advantages with case studies compared to other qualitative research methods is the fact that the researcher can both collect and integrate quantitative data from surveys and interviews. This facilitates the possibility to reach a greater understanding of the context and the phenomenon being studied. (Krefting, 1991)

| Source of Evidence      | Strengths  | Weaknesses   |
|-------------------------|--|--|
| Documentation           | <ul style="list-style-type: none"> <li>Stable – can be reviewed repeatedly</li> <li>Unobtrusive – not created as a result of the case study</li> <li>Exact – contains exact names, references and details of an event</li> <li>Broad coverage – long span of time, many events, and many settings</li> </ul> | <ul style="list-style-type: none"> <li>Retrievability – can be low.</li> <li>Biased selectivity – if collection is incomplete</li> <li>Reporting bias – reflects (unknown) bias of author</li> <li>Access – may be deliberately blocked</li> </ul> |
| Archival Records        | <ul style="list-style-type: none"> <li>Same as for documentation</li> <li>Precise and quantitative</li> </ul>  | <ul style="list-style-type: none"> <li>Same as for documentation</li> <li>Accessibility due to privacy reasons</li> </ul>  |
| Interviews              | <ul style="list-style-type: none"> <li>Targeted – focuses directly on case study topic</li> <li>Insightful – provides perceived casual inference</li> </ul>  | <ul style="list-style-type: none"> <li>Bias due to poorly constructed questions</li> <li>Response bias</li> <li>Inaccuracies due to poor recall</li> <li>Reflexivity – interviewee gives what interviewer want to hear</li> </ul>                  |
| Direct Observations     | <ul style="list-style-type: none"> <li>Reality – covers events in real time</li> <li>Contextual – covers context of event</li> </ul>   | <ul style="list-style-type: none"> <li>Time-consuming</li> <li>Selectivity – unless broad coverage</li> <li>Reflexivity – event may proceed differently because it's being observed</li> <li>Cost – hours needed by human observers</li> </ul>     |
| Participant-Observation | <ul style="list-style-type: none"> <li>Same as for direct observations</li> <li>Insightful into interpersonal behavior and motives</li> </ul>  | <ul style="list-style-type: none"> <li>Same as for direct observations</li> <li>Bias due to investigator's manipulation of events</li> </ul>   |
| Physical Artifacts      | <ul style="list-style-type: none"> <li>Insightful into cultural features</li> <li>Insightful into technical operations</li> </ul>  | <ul style="list-style-type: none"> <li>Selectivity</li> <li>Availability</li> </ul>  |

Table 1. Strengths and weaknesses of the different sources of evidence, adopted from Yin (2003).

In a case study, primary data is often collected through interviews and there exists many different designs for qualitative interviews developed to ensure a thorough investigation and collection of relevant data. It is of great importance that the interview guide is appropriate and that the research questions are carefully constructed. There are different formats for interview design, for example; informal conversational interview, general interview guide approach and standardized open-ended interview. (Baxter & Jack, 2008)

In the informal conversational interview, the interviewer does not ask any particularly questions; instead the interview is conducted through interaction with the participant. This interview design is suitable [when aiming to gain](#) a deeper understanding for an area and the interviewer construct questions as the interview proceeds allowing a great level of flexibility. The obstacles with this interview procedure is the inconsistency of interview questions and the consequently difficulties occurring when analyzing the obtained data. (Baxter & Jack, 2008)

The general interview guide approach is of a more structured manner than the informal conversational interview. Focus areas for the interview are determined and questions have been constructed beforehand. However, these questions might be worded differently depending on the participant's earlier responses. This technique allows some flexibility while ensuring that particular research areas are being covered. The limitation with the general interview guide approach is that the way the questions are expressed may influence the interviewee's answer. (Baxter & Jack, 2008)

In comparison to the former interview designs, the standardized open-ended interview is extremely structured and all the interviews will contain questions formulated identically. However, the questions are open and the replies thus vary. The interviewees may therefore contribute with as much information they want and can thoroughly explain their point of views. Even though the interviewer may not change the wording of the original question, follow-up questions may occur. The open-ended replies complicate the coding of the data and it may be hard to extract similarities from the responses making the data analysis challenging. However, if the research contains a big number of participants, this may reduce the bias within the study. (Baxter & Jack, 2008)

As suggested by Perry (1998), the initial phase of the project is to review relevant literature to understand the context and background of the problem and the case. Furthermore, in order to gather the necessary information during the project, secondary data is collected through a literature study reviewing documentation and archival records. Information regarding the current status of the Indian dairy market and available theories on circular economy including product return models and recovery options is gathered through this literature review. Table 2 shows the main key words that will be used during the literature study as well as the most important databases.

| Areas                   | Main Key Words   | Databases   |
|-------------------------|--|---|
| <b>Indian market</b>    | <ul style="list-style-type: none"> <li>• India economy</li> <li>• India Dairy Market</li> <li>• India Dairy Processing</li> <li>• Indian Dairy Farmers</li> <li>• Indian Consumer Trends</li> <li>• Leasing in India</li> <li>• Remanufacturing in India</li> <li>• Indian Development Trends</li> </ul> | <ul style="list-style-type: none"> <li>• EBSCOhost</li> <li>• Emerald</li> <li>• Euromonitor</li> <li>• ScienceDirect</li> <li>• SpringerLink</li> <li>• Web of Science</li> <li>• World Scientific Publishing</li> </ul> |
| <b>Circular economy</b> | <ul style="list-style-type: none"> <li>• Circular economy</li> <li>• Product returns</li> <li>• Recovery options</li> <li>• Remanufacturing</li> <li>• Refurbish</li> <li>• Second market</li> <li>• Leasing</li> <li>• Trade-ins</li> <li>• Product as a service</li> </ul>                             |   |

Table 2. Main key words and databases used during the literature review.

Primary data regarding the business climate in India and the Indian market company’s processes, customers and products is collected with the help of interviews performed with employees at the case company. Moreover, primary data is collected through interviews with persons with knowledge about the current use of circular returns strategies, both on the Indian market and internally within different market companies and BUs at the case company. The interviews in this project are of varying design. The first interviews are informal conversational interviews since the objective is to gain general knowledge about the Indian dairy market and the case company. The results from the first conversational interviews are

used as input when latter interviews are constructed. For these interviews a general interview guide approach is used to improve the accuracy and to facilitate the data analysis.

## 2.6 Data Analysis

In order to perform a case study the data analysis needs to be thoroughly done. Data needs to be examined, categorized and analyzed to validate if it can address the research questions. (Yin, 2003) The choice of analysis technique used should be based on the purpose of the case study but also on which approach that feels most comfortable for the researcher. (Baxter & Jack, 2008) Another important aspect during the analysis phase is to not lose sight of the purpose of the case study and the research questions that should be answered. Therefore Yin (2003) recommends the return to these several times during the case study. Another issue to be aware of is the risk of analyzing data sources and case participants independently, which could result in findings not representing the overall outcomes and the understanding of the case study not being holistic. In order to avoid this, other people, preferably in the same research team, should be asked to provide feedback of the analysis, how it is connecting to the research questions and the level of integration of the data sources. (Baxter & Jack, 2008)

The project is divided into different sections to ensure that all research questions are properly addressed and analyzed. Figure 4 shows the aimed progress chart for the project including the structure of the data collection and the analysis process. During the project, the supervisors from both the university and the case company are asked for input during the analysis process to ensure a holistic analysis.

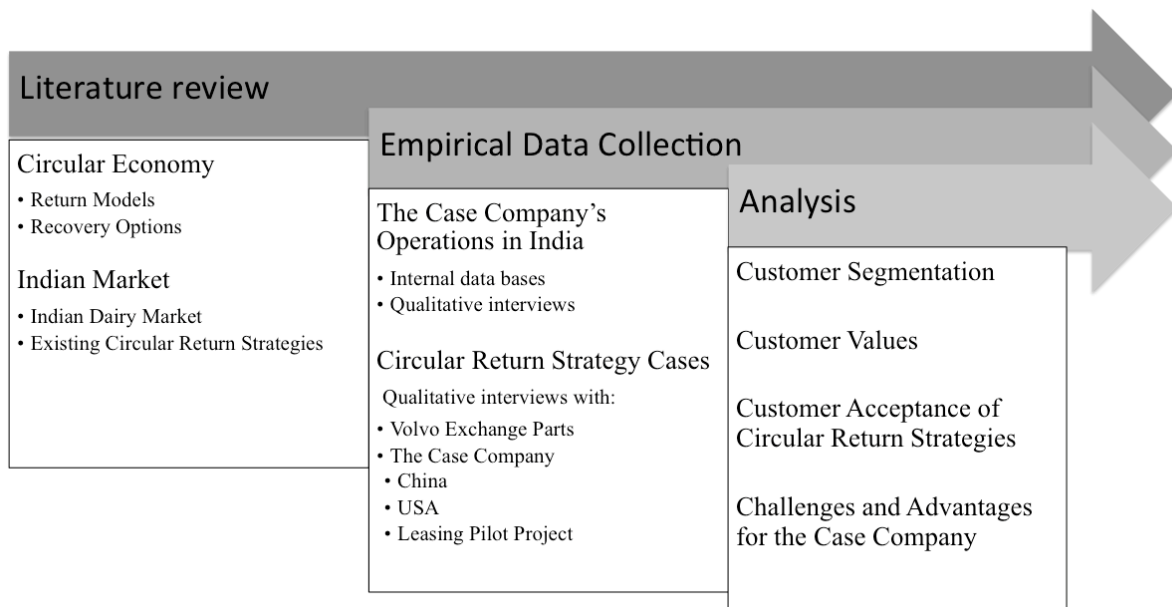


Figure 4. The progress chart for the data collection and the analysis process used during the project.

The project begins with a literature study where literature concerning circular economy and the Indian market are reviewed in order to gain a thorough understanding of the two main areas of the project. Within the literature review regarding circular economy there is a focus on reverse logistics, product return models and different recovery options in order to gain comprehensive knowledge about the main areas addressed in circular return strategies. A similar review approach is used for the Indian market. Firstly, a more general literature review of the Indian market is performed followed by a more focused study of the Indian dairy market. Secondly, literature addressing the use of circular economy, circular return strategies and more particularly remanufacturing and leasing on the Indian market is reviewed. The aim is to determine if and how parallels between the areas of circular economy and the Indian market can be drawn to facilitate market growth in emerging markets.

When a comprehensive base of knowledge is obtained from the collection of secondary data a new phase of the process begins. Here primary data is collected through qualitative interviews with representatives from the case company working on the Indian market. This will enable customer segmentation, an understanding of the customer needs and what factors affect their investment decisions. Furthermore, the qualitative data obtained from the interviews is complemented by quantitative data showing sale figures and customer purchases obtained from the case company's internal databases. This information will help answer the first

research question: “How can the Indian dairy processing customers be segmented and what values and requirements affect their investment decision?” Moreover, the information gathered could show where opportunities for the case company’s components can be found on the Indian market and to some extent what is required from the organization in order to capitalize on these benefits.

In addition, to the collection of primary data concerning the Indian market and the case company’s Indian customers, data about circular return strategies used in reality is gathered through qualitative interviews. The information regarding circular return strategies will be obtained by several case studies. One is an external case performed with Volvo Group who has been using a circular return strategy for a long time. Moreover, to gain deeper understanding about circular returns strategies applicability within the dairy processing industry, internal cases at the case company are studied. Information is gathered through qualitative interviews with two market companies with experience from leasing and remanufacturing. The case studies are performed in order to gain a deep knowledge of the challenges, success factors and specific customer requirements these companies faced when using circular return strategies. By analyzing the primary and secondary data collected from existing literature, qualitative interviews and internal databases, the Indian customers requirements are linked to the prerequisites for circular return strategies. This is done in order to evaluate if the case company’s Indian customers would accept circular return strategies. Hence, the second and third research questions are answered: “Are circular return strategies acceptable among the case company’s customers on the Indian dairy market?” and “What are the benefits and challenges with circular return strategies for the case company on the Indian market?”

By answering the research questions, the purpose of the project is achieved and the applicability of circular return strategies as a business model to increase the case company’s market share on the Indian market is evaluated. Furthermore, it is identified if the use of these kinds of strategies can be a way to increase the case company’s market share for components on the Indian market.

## 2.7 Validity and Reliability

When judging the quality of an empirical social research there are four commonly established tests used to guarantee the quality of the study. The first test is construct validity, meaning to ensure that the correct operational measures are used for the study areas. The second test, internal validity, is aiming to show that causal relationships are established, meaning that certain conditions are shown to lead to other conditions. This is only used for explanatory studies and not the descriptive and exploratory studies. In external validity, the goal is to test the platform used for generalization of the study's findings. In the last test, reliability, the aim is to demonstrate that the operations of a study i.e. the data collection process can be repeated and the concluded results would be similar to those of the study. (Kidder, 1986) Yin (2003) describes a number of ways for how to construe these tests on a case study and these tactics can be viewed in table 3.

| Tests                     | Case Study Tactic   | Phase of Research in which Tactic Occurs   |
|---------------------------|---|--|
| <b>Construct validity</b> | <ul style="list-style-type: none"> <li>• Use multiple sources of evidence</li> <li>• Establish chain of evidence</li> <li>• Have key informants review draft case study report</li> </ul> | <ul style="list-style-type: none"> <li>• Data collection</li> <li>• Data collection</li> <li>• Composition</li> </ul>                        |
| <b>Internal validity</b>  | <ul style="list-style-type: none"> <li>• Do pattern-matching</li> <li>• Do explanation-building</li> <li>• Address rival explanations</li> <li>• Use logic models</li> </ul>              | <ul style="list-style-type: none"> <li>• Data analysis</li> <li>• Data analysis</li> <li>• Data analysis</li> <li>• Data analysis</li> </ul> |
| <b>External validity</b>  | <ul style="list-style-type: none"> <li>• Use theory in single-case studies</li> <li>• Use replication logic in multiple-case studies</li> </ul>   | <ul style="list-style-type: none"> <li>• Research design</li> <li>• Research design</li> </ul>   |
| <b>Reliability</b>        | <ul style="list-style-type: none"> <li>• Use case study protocol</li> <li>• Develop case study database</li> </ul>  | <ul style="list-style-type: none"> <li>• Data collection</li> <li>• Data collection</li> </ul>   |

Table 3. Tests for validity and reliability, adopted from Yin (2003).

Another popular way to ensure credibility of data is triangulation of data types and data sources. This strategy is also compatible with the thought of using several sources and exploring numerous perspectives. (Knafl, 1989) Crosschecking interpretations and data from different data sources against each other is one way of doing triangulation. Another approach is to use different data sources, which can vary from different times, places and methods

helping to get a complete understanding of the concept. (Krefting, 1991) A third form of triangulation is to have more than one interviewee in case organizations (Perry, 1998).

During the project the aspects mentioned above to ensure quality of the case study are taken into careful consideration. Validity is constructed by doing as Yin (2003) suggests and multiple sources are used and a clear chain of evidence is established. A main theme through out the project is guaranteed by using the progress chart presented in figure 3, chapter 2.6 *Data Analysis*. Furthermore, constructed validity will be achieved with help of reviews from key informants from both the case company and the supervisor at Lund University during the progress of the case study. By using theories from literature to back-up the study at the case company and by applying some replication logic from other companies' circular business activities on the Indian market, external validity will be ensured. The reliability of the project will be achieved by presenting key words and databases used during the literature study and in the report include used interview guides, see appendix 1. Another way to ensure validity and reliability of the project is triangulating of data types, data sources and number of interviewees. This is illustrated in appendix 2.

## 2.8 Limitations of the Chosen Method

The nature of the chosen method sets a number of limitations for the conclusion. To begin with, no general conclusion can be drawn since the case study is performed in collaboration with only one actor in the dairy processing equipment industry. Secondly, data collection through interviews can be challenging and misinterpretations of the interviewees' answers can lead to incorrect conclusions (Flyvbjerg, 2006). Furthermore, difficulties in the communication and understanding as a result of language barriers could have had an impact on the primary data collected in some of the qualitative interviews. However, as transcripts from the interviews are sent to the interviewees in hindsight, the impacts of this issue are diminished. Thirdly, a common concern in case study research is the sensitivity and integrity of the researcher, which could affect the data collection (Flyvbjerg, 2006). In this project it is taken into consideration and as a way to handle this problem most interviews are performed by two interviewers. Another important aspect is the subjectivity of the researchers, which affects what questions are asked during the interviews and how the answers are interpreted.



This calls for the need of external validity in order to ensure an accurate analysis of the case situation (Flyvbjerg, 2006). During this project close contact are kept with the supervisors from both the case company and the university to gain external validity. Furthermore, the interview guides used are included in the appendix, see appendix 1. Finally, the result of the case study is limited to the number of interviews performed, the quality of these interviews and in particular the interviewees' knowledge on the research areas. This is addressed by performing a large number of interviews with interviewees with positions and areas of responsibility ensuring that they possess knowledge relevant for the case study.



### 3 Literature Review: Circular Economy

*In this sector the theoretic framework of circular economy is presented, which is the underlying theory for the examined business models. The theory and building blocks of circular economy are described and the concept of product return models and recovery options are particular investigated. The information is gathered through an extensive literature review and from this theory the definition of circular return strategies, is developed and its appropriateness for the case company is discussed.*

#### 3.1 The Definition of Circular Economy

The concept of circular economy has been developed from a number of principles such as performance economy, cradle-to-cradle and industrial ecology. In recent years circular economy has received increased attention due to more research within the area, attention from the European Commission and through companies developing business models based on thought from circular economy. (Ellen MacArthur Foundation, 2012a)

For companies and nations, continuous growth has historically been related to more consumption and therefore a strong correlation between economic development and use of resources exist. As economies keep growing, the demand for resources increases generating raised commodity prices and raw material shortages. (Accenture Strategy, 2014) As a result, there is a rising interest for circular economy caused by increased volatility of the global economy, arising resource scarcity and increased commodity prices (Ellen MacArthur Foundation, 2012a). Unfortunately, the current definition of economic growth is neither environmental nor socially sustainable and to achieve a sustainable development from an economic, social and environmental perspective a new definition of growth is necessary (Accenture Strategy, 2014). In order to achieve this and to decrease the environmental impact caused by humans, [historically an incremental approach has been used](#). This approach has not been sufficient and if companies continue with their businesses as usual it will result in a deficit in the supply of resources. (Greyson, 2007) This scarcity will not only lead to an unpredictable commodity market, but also increased costs for energy, material and water. Furthermore, there will be larger risk for both economic and social factors caused by disruptions in supply. Figure 5 illustrates the resource use of different countries in relation to

the economic development of the country. The correlation between economic development and use of resources is clearly demonstrated, as there is a linear relation between the most developed countries and the highest consumption of resources. (Accenture Strategy, 2014)

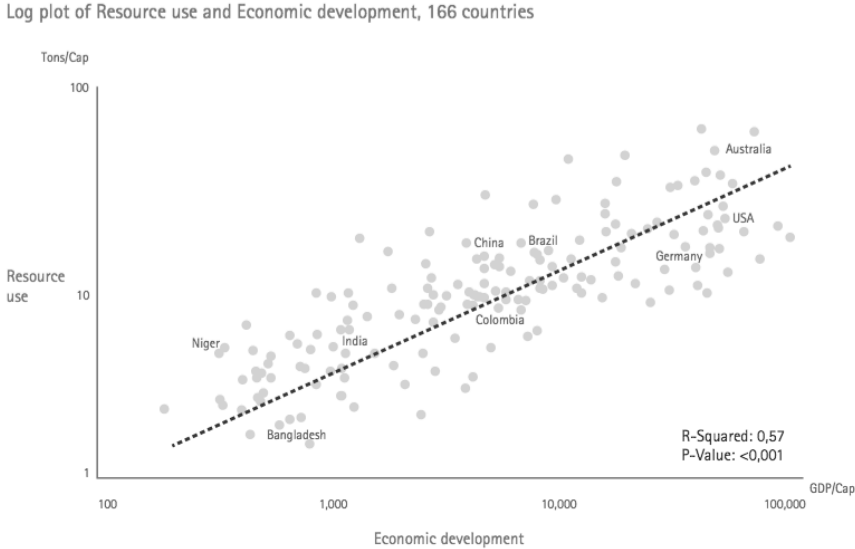


Figure 5. Different countries’ economic development in terms of GDP per capita in relation to use of resources (Accenture Strategy, 2014).

As a solution to these issues circular economy was developed as a new approach to grow and increase the welfare with the use of less resources. In the article *Towards the Circular Economy – Economic and Business rational for an accelerated transition*, a circular economy is described as: “An industrial system that is restorative or regenerative by intention and design. It replaces the ‘end-of-life’ concept with restoration, shifts towards the use of renewable energy, eliminates the use of toxic chemicals, which impair reuse, and aims for the elimination of waste through the superior design of materials, products, systems, and, within this, business models.” (McKinsey & Company, 2012) Instead of today’s take-make-dispose economy, where products follow a linear process, products in a circular economy are designed to be reused, remanufactured and recycled. Consequently from the product development phase and forward in the life cycle waste is eliminated and in a circular economy the design and objectives of the industrial system are transformed. Instead of disposing the products, the byproducts and components are utilized again. In addition, non-renewable energy and toxic chemical are eliminated and durable product components are used and moreover consumable components should be made of nutrients that are easily returned to the biosphere. However,

durable products are most often made of components such as plastic or metal, which is not easily absorbed by the biosphere. For this reason the life cycles of durable products should be extended and they should be designed to allow multiple life cycles. (McKinsey & Company, 2012)

The transformation from today's linear economy to a circular economy requires a change of mindset from both companies and society. As an example, for a successful implementation of circular economy, products should no longer be bought and owned by end-customers **but used instead**. This way a cycle would be created more naturally and when a customer no longer has the need of a product it is returned to the company. For this to be a viable option it is important to ensure the return of the products to the selling or manufacturing company. To guarantee the return of used products new business models are needed. There exist different possible options such as leasing, renting and sharing. If the products are sold, agreements or incentives ensuring the return of the product should be created. (McKinsey & Company, 2012)

### 3.1.1 Circular Business Models

A circular business model can be defined as the way an organization manages to create and deliver value in a closed loop of material. It is not necessary for a business model to close all the material loops itself in order to be recognized as a circular business model. The business model could also be part of a system of multiple business models that together close all the material loops. (Mentik, 2014) Since many companies today still uses linear business models, where material loops are not closed, it will take adjusting to achieve a circular business model instead. Accenture Strategy (2014) has identified five underlying business models that may help companies to develop new innovative circular business models where resources are used in an efficient and effective manner. The five business models are called: *Circular Suppliers, Resource Recovery, Product Life Extension, Sharing Platforms and Products as a Service*. (Accenture Strategy, 2014)

In the *Circular Supplies* business model, the company is a supplier and is contributing to circular economy by supplying renewable and recyclable resources. This way it becomes a part of a larger system by helping other companies to reduce their use of resources and minimize the produced waste. (Accenture Strategy, 2014) The second circular business model presented is called *Resource Recovery* and the model is based on recycling and reuse of resources and energy from disposed products and byproducts. This is a suitable business model for manufacturing companies with a large amount of byproducts. The third circular business model identified is called *Product Life Extension* and is especially an appropriate business model for capital-intensive Business-to-Business (B2B) companies. It could also be suitable for companies producing products where newer generations of a product create limited additional benefits compared to the previous version. A company using this business model generates value by recovering and upgrading products whose value otherwise would have been wasted. Only obsolete components are replaced rather than replacement of the complete product. (Accenture Strategy, 2014)

The most commonly used circular business model by non-manufacturing companies is called *Sharing Platforms* and in this type of circular business model utilization is maximized through collaboration among users. This circular business model has lately gained recognition within the automotive industry and one example is car-pooling companies. This kind of business model based on sharing among users may also be appropriate for companies with products with low utilization rate. The last circular business model is a model referred to as *Product as a Service*. In this model the customers pay for the product performance instead of the actual product hence for the service the customer requires. By using this business model, incentives for durability are created and longer lifecycle and second hand markets are not viewed as risks for cannibalization but as opportunities for new revenue streams. (Accenture Strategy, 2014)

### Value Creation in the Circular Economy

Circular business models create economic and environmental value in many ways. Nevertheless, the attractiveness of different circular business models varies depending on the characteristics of the product and its components. However, four principles for value creation in a circular economy are fixed. The first circular value creation is the economical benefits

that can be achieved by gaining input to new products by taking back used products. This circular business model is justified as long as the cost of returning the product to the market after collection and reprocessing is lower than the cost of developing the product in a linear process. (McKinsey & Company, 2012)

The second way circular business models may generate value for companies is from an increased length and number of consecutive product life cycles. By using an appropriate approach for reusing, repairing, upgrading and remanufacturing of the products, companies can save material and labor costs in each activity. (Nguyen, Stuchtey, & Zils, 2014) (Accenture Strategy, 2014) With increasing commodity prices the leverage of more sequential and extended circles will become even more beneficial (McKinsey & Company, 2012).

A third way to benefit from circular business models is to collaborate across value chains where waste outputs become inflows in another and advantage is gained from cascaded use (Nguyen et al., 2014) (Accenture Strategy, 2014). McKinsey & Company (2012) refers to this circular value creation as the: “Power of cascaded use and inbound material/product substitution.” Walter Stahel discovered that the process of creating basic materials from raw materials takes more energy and less labor than the production of finished products from basic materials. More specifically, the transformation from basic material to finished products uses more manpower than energy. Hence, the processes of remanufacturing, upgrading, repair and reusing would reduce the cost of energy while increasing the amount of people employed. (Scott, 2013)

Lastly, by minimizing the number of different materials used in products during the product design will facilitate the disassembly and material substitution. This would in turn make the process of reverse logistics more efficient and facilitate the process of reuse and recycling. Simplifying the process will additionally improve the values gained from the former three circular value creations and at the same time reduce the required amount of material, labor and capital. To improve the values gained from the presented value creators the inputs should be as non-toxic as possible and renewable resources and energy should be used. (McKinsey & Company, 2012) (Nguyen et al., 2014) (Accenture Strategy, 2014)

## Challenges with Circular Business Models

The potential of circular business models is great and can increase companies' profit while decreasing their environmental impact. However, it is not an easy task to capitalize on these benefits. Most companies are structured around a linear business model and to take advantage of the possibilities presented in a circular economy organizations need to change their strategies, structure and their whole way of doing business. (Accenture Strategy, 2014)

The imbedded behaviors of customers and companies hinder the business models' transformation since these behaviors affect the whole business landscape. It is a great challenge to change behaviors. However it is essential to change the society's attitude in order to create a successful circular business model. For example most customers are used to evaluate an investment on the upfront cost even if more expensive products might be economically beneficial in the long run. The habit of companies also complicates the adaption of a circular business model since many organizations are uncertain about what risks and cost a transformation would entail. (Nguyen et al., 2014)

Another difficulty that companies need to conquer is the geographical dispersion of products and components that makes it challenging to close the material loops. To overcome the difficulties caused by geographical dispersion, a global commitment and support are required and company leaders must start to pay reverse logistics as much attention as the traditional inbound logistics. (Nguyen et al., 2014)

## 3.2 Circular Return Strategies

A business model that can be a part of a circular business model has been developed. This business model has been named; circular return strategies. A circular return strategy is defined as the loop for the product from the market and back to the company. For this business model to work, suitable product return model, reversed logistic and recovery option need to be selected. Furthermore, the customers need to demand and accept recovered products. In the transformation towards a circular business model one important step is to define a strategy for how the products should be returned from the customers to the manufacturer after the products have served their purpose. This process is often called reverse logistics or reverse



supply chain and is a part of a closed-loop supply chain. Ferguson and Souza (2010) define closed-loop supply chain as: “Supply chains where, in addition to the typical ‘forward’ flow of materials from suppliers all the way to end customers, there are flows of products back (post-consumer touch or use) to manufacturers.”

The objectives for reverse logistics may be either market driven or waste driven. In a market driven closed supply chain the objective is to introduce the returned products to the market with maximal profitability. This approach stresses the importance of the decision regarding what products to acquire, which is not as important in a waste driven closed supply chain. When the reverse supply chain is driven by waste, the company accepts all returned worn out products, referred to as cores. The primary focus is on how the returned cores should be classified and what they should be used for. The product acquisition, the grading of returned products and the disposition decision, the decision about the product’s future use, are the main activities that distinguish the reverse supply chain from the traditionally forward supply chain. (Ferguson & Souza, 2010)

Designing an appropriate reverse supply chain is not an easy task and skills, such as product acquisition, grading, remanufacturing and refurbishment are critical for a successful reverse logistics. Savaskan, Bhattacharya and Van Wassenhove (2004) address the question of how a manufacturer selects an appropriate reverse channel structure and in their research they investigate three options for reverse logistics layout. The manufacturer can either collect the used product from the customer themselves, through retailers or with the help of a third party. The research concluded that the most effective structure for reverse logistics is when the retailer operates the return of products. However, it is important for manufacturers to investigate the most appropriate structure in their specific case since the result is influenced by external factors such as the cost structure of the actors performing the collection. (Savaskan, Bhattacharya, & Van Wassenhove, 2004).

### 3.2.1 An Increased Rate of Return by Using Product Return Models

A criterion to enable circular return strategies is a guaranteed return of used products to ensure a supply of products to recover. There are different ways to make sure that the products are returned to the company after their usage. One way is for the company to retain

ownership of the products, which could be done by using business models such as leasing, rental or pay-per-use models. This is favorable since besides securing the supply, the company still has control over the products' quality and a strengthened customer relationship may be achieved. (Nguyen et al., 2014) If it is not possible to retain ownership of the products other incentives and agreements should be arranged to ensure the return of the products, such as trade-ins and guaranteed repurchase price. (Joustra, Jong, & Engelaer, 2013)

As mentioned, leasing is one of the suitable product return models. It is appealing since the company has control over the products and is particularly attractive for durable goods (Souza, 2013). When a company leases a product they spread the cost of finance since a lease is based on periodic payments. Lasfer and Levis (1998) studied what factors affect the leasing decision, which is a financial decision and can be compared to borrowing and acquiring an asset. The main determinants are proven to be dependent on the size of the company. For small companies leasing is driven by growth opportunities, while profitability, taxation and leverage is the main drivers for big organizations. Small companies with high growth use leasing instead of debt financing since their low profitability complicates the use of alternative sources of finance. (Lasfer & Levis, 1998) There are two main types of leasing: financial and operational. In financial leasing the customer obtains ownership of the equipment and the equipment is seen as an asset. This transaction of the product ownership results in transfer of the risks and benefits associated with the leasing contract from the company to the customer. In an operational leasing the company still owns the equipment and the customer is obliged to pay for the utilization of the equipment. These payments are recognized as expenses during the leasing period. In finance lease the customer often purchase the asset at the end of the leasing period. (European Commission, 2010)

Other similar business models, including rental and pay-per-use, exist if leasing for some reason is not deemed suitable. Rental services are very similar to operating leases since the company retains ownership of the product. However, the main difference between the operating lease and rental is that rentals often take place during a limited amount of time varying from a day to one year. In a pay-per-use financial model the customer retains the ownership of the equipment. However, instead of paying a contracted amount of money in a linear basis during the leasing period the user pays for the performance of a product. Quite

often the utilization of the product is estimated and a minimum product usage is agreed before the contract is signed. One main advantage with this type of business model is the flexibility for the customer. (Joustra et al., 2013)

When business models with periodic payments are not preferable, other models can be used to increase the rate of returned product. One way is to guarantee a repurchase price for the product already at the point of sale. Usually the guaranteed repurchase price is given under certain premises decided beforehand. These premises usually concern the product's condition, its usage and the location and time of return. (Joustra et al., 2013) Another way is to perform trade-ins, which is mainly applied when a consumer wants to upgrade a still functional product (Zhu, Chen, & Dasgupta, 2008). In most cases the trade-in generates a rebate on the new product reducing its investment price (McKinsey & Company, 2012). The value of the old product should be carefully evaluated and development of an appropriate acquisition model considering the quantity and in some cases also the quality of the returned items is recommended (Ferguson & Souza, 2010). Besides contributing to an increased rate of return of used products trade-ins might increase the customers willingness to pay for the new product and also could increase new sales (Zhu et al., 2008) (Okada, 2001).

In trade-in cases where the customer acts as both the seller of a used product and the buyer of a new, there are often extensive negotiations about the price of both products (Zhu et al., 2008). Research about how transactions involving trade-ins affects the customers' willingness to pay reveals that the customer puts more emphasize on receiving a good value for the old product and thus put less effort in negotiating the price on the new product. As a result the customer involved in a trade-in transaction has a higher willingness to pay for the new product than customers that solely purchase a product. However, the result is only supported when the consumer still values the used product and the willingness to pay is therefore not higher for the new product if the customer does not value the old one. (Zhu et al., 2008) Moreover, Okada (2001) stresses that trade-ins can increase new sales since the opportunity to trade-in the old asset lowers the customer's mental cost of retiring a fully functional product. Trade-ins therefore increase the willingness to upgrade products and some marketers use trade-ins to increase new sales even though they do not have any use of the old product. (Okada, 2001)

### 3.2.2 Recovery Options

When the used products have been returned to the company the products' quality are graded and a decision concerning appropriate recovery option and future use for the product should be decided in order to generate maximum profit. The recovery could concern an entire product or particular product components. (Ferguson & Souza, 2010) The company can choose between many different recovery options to which implies varying level of recovery. The most common recovery options are remanufacturing, refurbishment, repair, reuse and recycling. (Rathore, Kota, & Chakrabarti, 2011)

In remanufacturing, the core is reestablished to its original quality, often with the same guarantee and warranties as a new product. The costs of remanufacturing are generally 40-60% of the manufacturing costs for a brand new product and the savings gained are usually the main driver for remanufacturing. (Gaur, Amini, Banerjee, & Gupta, 2015) Furthermore, remanufacturing reduces the need for energy. Currently the world's combined remanufacturing activities are estimated to save the amount of energy generated by five nuclear power plants annually. (Volvo Trucks, 2014)

Refurbishing is the process most similar to the remanufacturing process but here the core is not recovered on a component level and methods, such as resurface and repainting, are used. In the refurbishing process a certain quality level are specified and the refurbished cores are recovered until they meet the agreed specifications. When a product is repaired, inaccuracies are corrected until the product is working again. (Gaur et al., 2015) This differs from the recovery option reused, which is when a second customer uses the core without prior recovery operations. (Rathore et al., 2011) Finally, recycled products are usually disassembled and treated in order to act as input to the original products or for a new purpose (McKinsey & Company, 2012). The different recovery options are illustrated and explained in figure 7.

| Recovery Options            |  |
|-----------------------------|--|
| Reuse                       | A second customer uses the product after only minor maintenance.   |
| Repair                      | The process of bringing damages components back to a functional condition.   |
| Reconditioning/Refurbishing | The process of recovering a product to a functional and/or satisfactory state to a certain specification, using methods such as resurfacing, repainting, etc. Only major components are being recovered. |
| Remanufacturing             | The process of bringing an assembly to a like-new condition through replacing and rebuilding the product on component level. All components are being examined to ensure a good quality.                 |
| Recycling                   | The process of recovering products for the original or a new purpose. Materials that are recycled are usually used as feedstock to develop a product.  |

Figure 6. Description of the different recovery options, adopted from (Rathore et al., 2011).

### Challenges and Opportunities with Remanufacturing

The importance of the remanufacturing market is increasing and has led to many publications of academic research within the area. In the United States there are currently more than 2000 firms claiming to be remanufacturers and this number does not include firms focusing on refurbishment, which would have increased the number significantly. Different actors in the value-chain can perform the remanufacturing operations, for example either the Original Equipment Manufacturers (OEMs) or independent manufacturers. The costs associated with the remanufacturing process are generally lower than the marginal costs of producing a new unit due to the possibility to reuse parts in the remanufacturing process. Therefore, most academic research has assumed that firms want to remanufacture their products and the research focus is often on how to improve the remanufacturing process. In reality however, most OEMs ignore the financial benefit associated with the remanufacturing process and only 6 % of the over 2000 remanufacturing firms identified in a study in the USA were OEMs. Ferguson and Souza (2010) have in their book *Closed-Loop Supply Chains: New Developments to Improve the Sustainability of Business Practices* identified strategic decisions and tactical problems associated with the entry to the secondary market. (Ferguson & Souza, 2010)

The obstacles of creating a totally new remanufacturing process are primarily associated with the risks and costs any major business transformation entails. Major organizational changes

need to be performed since the remanufacturing process is totally different from the production process. The setup of the reverse logistics needed for the collection and transport of the used products is very different from the traditional forward supply chain. These operational changes are costly and might be seen as out of scope for the manufacturers existing capabilities that often are focused on new product sales. If the manufacturer has outsourced the production he might face difficulties and high costs when setting up the remanufacturing process. (Ferguson & Souza, 2010)

Cannibalization is another area that concerns many OEMs since they are afraid that the remanufactured products will reduce demand for the new products sales. (Ferguson & Souza, 2010) However, Guide and Li (2010) investigated this statement further, something that most OEMs rarely do. The result of the study indicates that the potential buyers do not coincide for consumer products, but that there might be a potential risk for cannibalization for commercial products. (Guide Jr & Li, 2010)

Even though the uncertainties with remanufacturing are a managerial issue there are also many opportunities that can be missed if the OEM chooses not to remanufacture. For example the existence of third-party remanufacturers can cannibalize on the OEMs' new product sales. Furthermore, the presence of third-party remanufacturers not using the same product specifications as the OEMs might lead to sale of products with a lower quality affecting the brands perception of high quality. This may affect the OEMs' image even though they no longer are responsible for the service and maintenance of the product. To reduce the risk of quality issues, some OEMs form alliances with third-part remanufacturers to certify a certain quality guaranteeing the performance of the products. (Ferguson & Souza, 2010) An additional benefit with remanufacturing is that sales of remanufacturing products could result in a market expansion. The remanufactured products' lower price enables the company to reach new, more price-sensitive customer segments that are not able to pay for a new product. (Souza, 2013)

There are challenges that need to be conquered when developing a remanufacturing business, however, companies that do succeed face great financial benefits. There are several examples of companies that have been successful when integrating strategies for remanufacturing. Caterpillar and Xerox Corporation are examples of companies that lowered the upfront

investment cost of their products by changing their business model to a leasing and remanufacturing strategy. Xerox Corporation, for example, managed to save \$200 million in a year by remanufacturing their copiers. (Ferguson & Souza, 2010)

### 3.3 Circular Return Strategies Feasible for the Case Company

A way to make circular economy become a part of a company's strategy and activities is to have a circular return strategy where suitable strategies are used in order to close the loop from the customer and back to the manufacturer. Circular return strategies include many different activities, such as logistic, manufacturing and customer relations. Depending on what type of product a company is producing and the current organizational setup, certain strategies to close this loop are more suitable than others. Due to the characteristics of the case company's components the feasibility of different product return models varies. Since processing components requires thorough installation at the production site and hence are difficult to move it is not favorable to develop a circular return strategy where rental is used as rental usually means that the customer only uses the product for a limited period of time. Rental should only be used in the case of emergency and is not suitable to be used as an option when developing a new business model. Leasing on the other hand is a better option since this is a more long-term model, which justifies the installation and transportation of the equipment. Furthermore, leasing is a way to lower the upfront-investment costs, in comparison to a normal product purchase, and might therefore attract new customers that are not as financially strong as the case company's current customers.

A pay-per-use model is not ideal for components since it is complicated to move the machines from one site to another in order to optimize the utilization. Most likely, the customers requesting a pay-per-use model are customers with low utilization of the equipment. A low occupancy of the equipment results in low payments to the case company and is therefore not a feasible financing model from the company's perspective. However, a pay-per-use model with higher utilization could be obtained if the case company build a production plant where a numerous amount of customers could process their products and for example pay per liter processed liquid. This is an interesting business model but since the machines are not

physically returned to the manufacturer this model is considered out of scope for this project and will not be further investigated.

The creation of incentives for customers to return their products when they do not use them anymore may be done by the use of trade-ins and guaranteed repurchase price. Both of these product return models are feasible for process equipment since it would be a complement to the traditional capital sales presently used.

To conclude, the reflection indicates that most appropriate product return models to use for processing components are: leasing, trade-ins and guaranteed repurchase price. In figure 8 the loop from one customer to the next is demonstrated. The product return models should be used in order to enable an efficient circular return strategy.

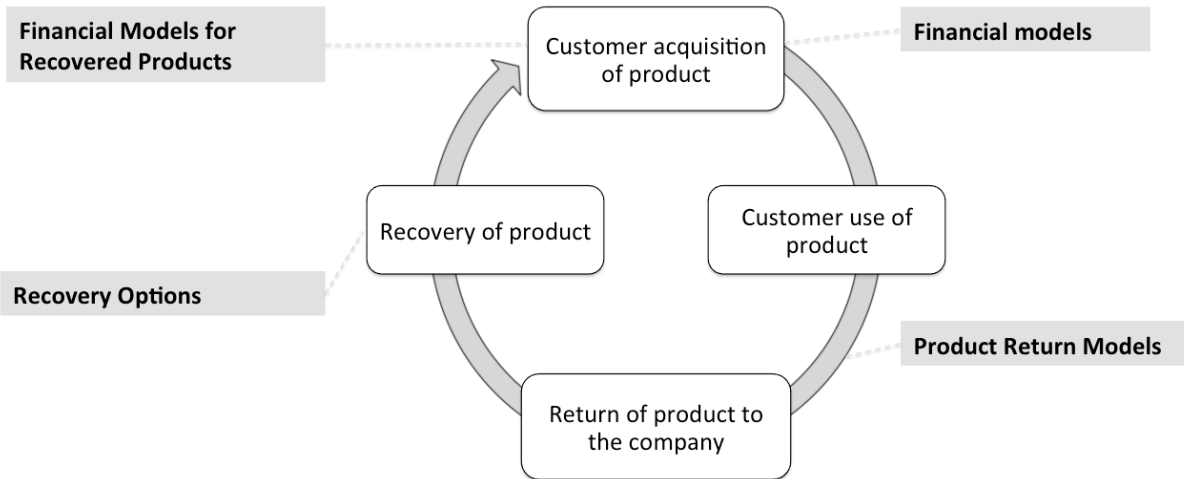


Figure 7. Circular return strategies are the strategies needed to successfully complete the loop.

In conclusion, a circular return strategy developed by using leasing, trade-ins and product repurchase may be appropriate for the case company to use as it suits the characteristics of the component. The suitability of these product return models and how they can be used in order to develop a circular return strategy on the Indian dairy market will be further assessed from the customers point of view. Furthermore, the customers’ requirement for the recovered product will be examined.



### 3.4 Circular Return Strategies From A Market Perspective

In this project the feasibility to implement circular return strategies will be analyzed from a market perspective meaning the customers’ view will be investigated. One aspect that will be explored is the customers’ attitude towards recovered products since circular return strategies are not possible if the market does not accept the usage of recovered products. Furthermore, this will be put in the context of the Indian market since circular return strategies could be a way for the case company to increase their market share on this market. This is because many customers are price-sensitive and recovered products usually require a lower investment cost. Another aspect that is important from the market perspective when developing a circular return strategy is the customers’ opinion on product ownership, Total Cost of Ownership (TCO) versus initial investment cost and attitude towards periodic payments. Figure 9 demonstrates the two main aspects that are important from the market perspective and shows in which phase of the circular return strategy they are critical.

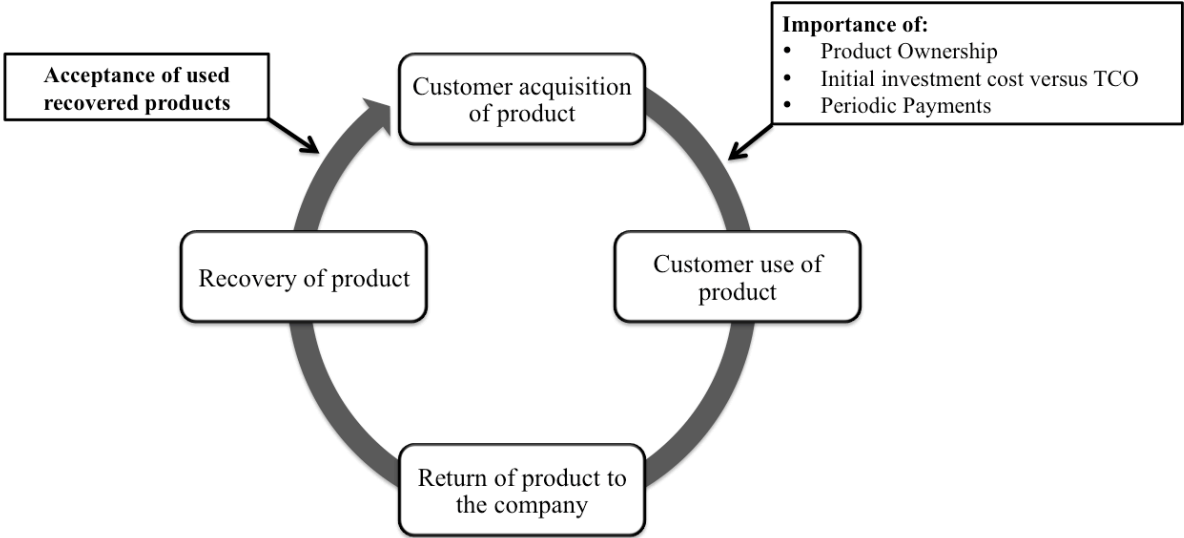


Figure 8. The two most important aspects for the customers when analyzing circular return strategies from a market perspective are the customers’ view on different financial models and acceptance of recovered products.

The Indian customers’ requirement for recovered products will be assessed in order to evaluate the potential of a business model using circular return strategies. Moreover, an appropriate product return model has to be chosen to fit the customers’ request. As identified

in the theory, there are many different product return models to select from. The product return models can be categorized in two groups: one consisting of the models where the products are not owned by the customer, category 1, and the other containing the product return models where the customer obtain the ownership of the product, category 2. The two categories and corresponding product return models can be seen in table 4. To identify the product return model preferred by the market the first step is to investigate the markets preferences in regard of product ownership. If the customers insist on owning their equipment it may be a better alternative to choose a product return model where the customer gets the product ownership.

| <b>Category 1</b>   | <b>Category 2</b>           |
|---------------------|-----------------------------|
| Operational Leasing | Financial Leasing           |
| Rental              | Trade-ins                   |
| Pay-per-use         | Guaranteed repurchase price |

Table 4. Categorization of product return models possible for the case company.

Moreover, the customers' decision making process when making an investment play an important role for the development of a circular return strategy from a market perspective. It is necessary to evaluate if the customer focus on TCO or initial investment cost. In case of the former a model where the customer own their equipment is favorable since this reduces the stacked payments over time resulting in a lower TCO. On the other hand, if customers prioritize a low investment cost a model where they do not own the product is often superior since this means that the costs are spread over a longer period of time. The importance of these customer parameters will be further investigated for the Indian market in order to identify the most viable circular return strategy for components on the Indian dairy market. Moreover, the customers' requirement for recovered machines will be evaluated in order to identify critical success factors for recovered products on the Indian market to evaluate which recovery option that is most suitable to use.

## 4 Literature Review: The Indian Market

*In this sector a thorough description of the Indian market and in particular the Indian dairy market will be presented. Relevant literature in the form of articles, books and reports have been used to conclude the structure of the market, future growth potential and identify challenges, opportunities and obstacles. The Indian market and economy in general are investigated followed by one sector focusing on the Indian dairy market and one sector covering cases found in the literature about circular return strategies in India.*

### 4.1 The Indian Economy

The interest in emerging markets is growing and many companies identify growth potential in base-of-the pyramid markets. During the last decades the development of the BRIC-countries has been closely monitored and been an intriguing, new customer segment for many companies. Even though India is the poorest and least developed of the BRIC-countries the large population still makes it a very attractive market. (Mansfield, 2014) Today India is the second most populous country in the world but in as little as ten years it is predicted to surpass China and become the most populated nation. Furthermore, it is a very young population with a median age of only 26,7 years resulting in India having a large potential work force, which could be an asset helping the world's largest democracy to become a developed country. At the moment, India is the third largest economy with a GDP of \$4.99 trillion; despite this, almost a third of the population lives in poverty. (Central Intelligence Agency 2, 2013)

The Indian economy has experienced a large change over the past 25 years moving from an undeveloped country to becoming the third largest economy in the world. In the early 1990s India was a closed-door economy highly regulated by the government, since then extensive reforms and deregulations have moved the Indian market in the direction of an open-market economy. The process is not yet completed but to this point the liberalization of the economy includes privatization of state-owned companies, industrial deregulation and more open policies for foreign trades and investments. These actions have helped increase the growth of the country to an annual 7 % between the years 1997 and 2011. Since then the growth rate has decreased due to factors such as rising inflation, high interest rates, macroeconomic

imbalance and uncertainty of the government's intention with new reforms causing a depreciation of the Indian rupee and Foreign Direct Investment (FDI) levels to sink. However, in 2014 the current account deficit was reduced and hopes of new reforms helped stabilize the rupee and increase the foreign level of investment again. Due to India's increasing integration into the global economy, young population, and healthy investment and savings rates the prospect of a long-term growth is positive. (Central Intelligence Agency 2, 2013)

The Indian economy is very diverse and consists of both highly advanced industries as well as very underdeveloped areas. Even though the country is experiencing urbanization, the main part of the population still lives on the countryside and roughly 50 % of the working force is involved in the agricultural industry, from modern agriculture to traditional village farming. Many of the modern industries focus on a wide range of different services representing the dominant factor of the economic growth; occupying less than one third of the labor force but stands for almost two thirds of the country's output. It is mainly the educated, English-speaking population contributing to the successful export of services, including information technology, software and business outsourcing. (Central Intelligence Agency 2, 2013)

Despite the current decrease in growth, there is a belief that India's future development is positive. However, the country is facing many challenges, which could affect the long-term progress if not properly addressed. Barton and Kaka (2013) have identified several issues including the complicated bureaucracy of the government, the barriers for foreign multinational companies, the widespread poverty and the aim to reach a sustainable development. Further problems occurring on the Indian market are corruption, inefficient infrastructure and power generation, discrimination and violence against women, limited employment opportunities outside of the agriculture sector and low quality on education. Before India can emerge as a developed country these issues need to be addressed, which is a challenge considering the large population and lack of funding. (Central Intelligence Agency 2, 2013)

When operating on the Indian market it is important not to view it as one holistic market. India is not a single investment destination but consists of 29 states and 7 territories, each differing substantially from each other. Historically, India was formed and unified by the British use of military and technology. As the founder of Singapore, Lee Kuan Yew,

described the structure of India: "India is not a real country. Instead it is thirty-two separate nations that happen to be arrayed along the British rail line." Or to quote Winston Churchill: "India is merely a geographical expression. It is no more a single country than the Equator." (Zakaria, 2013) Therefore companies need to carefully consider which states to operate in since tax policies, labor cost, culture, language, physical and legal infrastructure among other things can differ between the states. (Mahindra, 2013) Furthermore, an important aspect to keep in mind is that even though many of the differences builds on historical factors it is not likely to change any time in the near future since the power of regions is large and regional parties govern most states. However, during the process of becoming an open economy the urban middle class has raised the expectations on themselves and their government. As a result this rapidly growing group helps unify the diversity since they often have interest transcending regions and religion. (Zakaria, 2013)

## 4.2 The Indian Dairy Market

India is the world's largest producer of dairy and dairy products with a production representing 13 % of the milk produced globally each year. (Miranda & Ramachandran, 2014) Furthermore, it is a constantly growing sector causing it to be of great interest to global dairy companies looking for new opportunities. In addition, the saturation of the demand for dairy in many of the western markets has pushed large companies to detect the huge potential in developing countries such as India where both demand and production are growing. (The Economic Times 1, 2014) During 2015 the milk production in India is expected to increase with 4.6 % given that the monsoon season is normal. This is a positive development since the demand for milk and dairy product is constantly growing on the Indian market and to meet the future need the dairy production should target a growth rate of at least 5 % annually. (Mani & Intodia, 2014)

### 4.2.1 Structure of the Market

Historically India has not produced more dairy than other nations and was dependent on import from other countries for processed products such as butter and milk powder. (Miranda & Ramachandran, 2014) However, the Indian Government tried to become self-sufficient by launching a program during the 1970's: Operation Flood. It was a government run

development program for integrated dairy cooperatives with the aim to assure small milk producers of a demand all year around and build a link between the urban market and the rural production. This program caused the production to grow three fold between 1971-1996 as millions of milk farmers formed milk cooperatives. At the end of the program in 1996 these cooperatives dominated the dairy market and have continued to develop since then. However, in recent years they are facing harder competition from private companies due to the liberalizations. (Karmakar & Banerjee, 2006)

At the moment the dairy sector is very fragmented and there exists about 70 million dairy farmers spread throughout the country, each milking two to three cows or buffalos on average. (The Economic Times 2, 2011) The industry for milk processing, known as the organized dairy sector, is disproportional to the milk production in the country and annually only between 10-20 % of the produced milk arrives at a dairy plant to be processed. The most common is that vendors collect the milk from small producers and then sell the unprocessed milk in close-by rural and urban areas. Approximately 65-70 % of the produced milk is handled this way by an unorganized sector of milkmen. (Karmakar & Banerjee, 2006)

A large difference between India and other countries affecting the market structure is the fact that buffalo milk is regarded as important as cattle milk. Of the processed milk in the organized sector 53 % comes from buffalos and remaining from dairy cattle. (Rao, Raju, Reddy, & Hussain, 2013) The cause of this is both cultural and due to the higher fat content in the buffalo milk making it more nutritious which generates a higher price. (The Economic Times 1, 2014)

The National Dairy Development Board (NDDB), together with the Indian Government and the World Bank, is currently overlooking the implementation of a program called the National Dairy Plan (NDP) consisting of three phases. The aim is to increase the milk production in India with 6 million tons every year during the coming 15 years. Implementing agencies, known as EIAs, will perform the main part of the activities supervised by the NDDB. EIAs can be everything from cooperative dairy federations, NGOs and producer companies. (R. Singh, 2012) The first phase was lunched in the 14 most dairy producing states in spring 2012 and the planned implementation time is six years with a budget of \$416 million. One of the objectives is to introduce better feeding and breeding in addition to better management to

improve the productivity of the dairy animals. Furthermore, the top priority of the first phase is developing the organized dairy sector by expanding the dairy cooperatives. To achieve this the NDP will help rural dairy farmers to gain better access to the organized milk processing industry by promoting and making the village based procurement systems stronger. This will hopefully increase the share of active producer members in cooperative, which could lead to more milk sold to the organized sector since the village will have a larger combined volume that could be collected and processed. To reach this goal the NDP will focus on areas with low percentage of cooperative and setup producer companies there. (R. Singh, 2012)

The dairy production in India is mainly done in 14 of the 29 states: Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. In 2012 they together accounted for over 90 % of the total milk production in the country. In addition to this, 87 % of India's total amount of cattle and buffalos can be found in these 14 states and 98 % of the animal fodder resources are located here. (R. Singh, 2012)

#### 4.2.2 The Consumer of Dairy Products

Dairy products have always been popular in the Indian culture and are seen as important ingredients in the main part of Indian meals. In addition, a large part of the population keeps a vegetarian diet because of religious reasons. For this segment dairy products are the main source of animal protein and a relative cheap source of good nutrition. This is particular true for landless, small and marginal farmers. (Karmakar & Banerjee, 2006) Furthermore, many Indian consumers would like to increase the share of dairy products in their daily meals to increase the nutrition values of their food. (Euromonitor International 1, 2013)

The household consumption of dairy is approximately 65 % of the total revenue of dairy products sold. Milk and cream is by far the largest category with 52 % of the total market share, followed by butter and ghee at 37 %. (Euromonitor International 1, 2013) Based on rising income and population growth, the consumption of fluid milk is expected to grow with nearly 5 % in 2015. Especially the increase in income affects the amount of milk and dairy products sold since a higher income level allows for more expensive and nutritious food. It is often the amount of higher-value products including milk and milk products that increase

when the income increases. (Mani & Intodia, 2014) The urban areas have a higher dairy consumption than the countryside and the division in dairy consumption is 50-50 between rural and urban areas even though most of the population lives on the countryside. (Karmakar & Banerjee, 2006) In general, a consumer in the urban areas spends 19 % of the total food expenditure on dairy product versus a consumer in a rural area that only spends 15.5 %. (S. R. Singh & Datta, 2010)

During the last decennium there has been a change in consumer preference due to more health and quality conscious consumers putting a higher pressure on the industry and the dairy cooperatives. (S. R. Singh & Datta, 2010) Food safety has become an increasingly discussed topic on the market. Milk pasteurized in the organized sector is regarded as safe since the dairy facilities examine the raw milk's quality before processing it. However, in the large unorganized dairy sector the food safety is a challenge due to lack of testing, hot climate and insufficient knowledge on farm managing. A recent study conducted by the Food Safety and Standards Authority of India showed that 68.4 % of the sampled milk was contaminated with urea, fat, water and detergent. In addition, almost 46 % had water added to it, which is explained by the fact that dairy farmers are often paid based on volume. At the moment the organized dairy sector only represents 10-20 % of the total production of dairy however it is expected to be a surge in the demand for pasteurized milk processed by the organized sector. The rising income levels, especially in the urban areas, allows consumers to buy products of higher quality and the increasing demand for processed milk is believed to be because customers regard it as safer. Since the organized sector only has approximately 20 % of the market the question is raised if it will manage to expand fast enough to meet the rapidly growing demand. (Mani & Intodia, 2014)

The consumption patterns for dairy products have also been affected by change in demographic. It is becoming increasingly common for women, in the urban areas in particular, to pursue careers resulting in less time for housework and cooking. Effectively urban families are consuming more ready-made dairy products such as yogurt, butter, paneer and different types of dairy-based desserts that were traditionally made at home. Due to convenience products on small niche markets, such as packaged yoghurt and ready-to-drink lassi, are becoming increasingly popular. Furthermore, this opens up for other processed



products that are not traditionally Indian including flavored milk, ice cream, processed cheese and baby food. Estimations made by Rabobank, a food and agribusiness bank in India, indicate an increase in market share for value-added products representing 21-31 % in the coming five years. (Mani & Intodia, 2014)

At the moment processed cheese and curd holds a small proportion of the dairy market with around 2 %. (Euromonitor International 1, 2013) However, during the last years a new customer segment has developed and is growing rapidly: fast-food chains and other food industries. (Karmakar & Banerjee, 2006) Global experts forecast an increase in cheese consumption with 15-20 % annually in India due to influences of western foods including pizza and hamburgers. (Mani & Intodia, 2014) The B2B purchases account for 35 % of the revenues on the dairy market and during the time period between 2007 and 2012 most of the buyers in this sector had a double-digit growth in dairy consumption. The biggest B2B customers are restaurants, canteens and bars, which due to life-style changes are becoming more in demand since more Indian consumers dine out. (Euromonitor International 1, 2013)

#### 4.2.3 Export and Import

A huge quantity of dairy, 135 million tons in 2013, is produced in India every year; even so India is a minor player on the international market. As an example the Indian export of dairy only made up 0.3 % of the global market share during 2013. (Miranda & Ramachandran, 2014) It is primarily non-fat dry milk (NFDM) that is exported to milk-deficient countries including Egypt, Bangladesh, Algeria, Sri Lanka and Pakistan. During 2015 the export quantities of NFDM is predicted to approximately 75 thousand tons, which is an increase of 7 % from the previous year. Small volumes of butter and other dairy products are also exported, mainly to neighboring countries. (Mani & Intodia, 2014)

The Indian market is annually experiencing a shortage of up to three million tons of dairy due to the large domestic demand. (The Economic Times 2, 2011) Despite this, the import is fractional because of high import taxes on milk and milk products resulting in a need to produce the majority of the dairy products locally. In order to put pressure on the domestic prices, India has historically imported some dairy products, but on an irregular basis. At the moment import levels are low and dairy products from some countries, Chinese corporations

for example, are prohibited to enter the country. The amount of milk and dairy products imported to India is highly regulated and, besides the tariff rate quotas, both import permit and sanitary certificates are required. The necessary documentation is issued by The Ministry of Agriculture and regulated under the Food Safety and Standards Regulations. (Mani & Intodia, 2014)

#### 4.2.4 Structure of the Dairy Farmers

The farming sector in India is to a large extent still very underdeveloped and the salaries in the dairy industry are in general 50 % below national average. (Euromonitor International 1, 2013) Most commonly small crop farmers keep a small amount of dairy animals as a supplementary source of income and food. Although in some parts of the country and among certain segments of the farmers the development is more progressed and dairy production is a full-time occupation. To a small extent the traditional farms have been replaced with modern, commercial farms generating higher productivity. (S. R. Singh & Datta, 2010) However, the absolute largest part of the milk production is still performed by micro-sized enterprises meaning they employ less than ten people. In 2012, 99 % of the companies in the dairy industry were micro-sized and there existed only 24 large enterprises, meaning they have more than 500 employees. However, these 24 companies represented 40 % of the total dairy production. (Euromonitor International 1, 2013) Many of these large companies are cooperatives consisting of millions of small farmers. This is a consequence of the NDDB's efforts to make the sector less fragmented. In 2013 roughly 15.1 million farmers were part of a dairy cooperative. (Mani & Intodia, 2014)

#### Main Challenges

Unfortunately many dairy farmers have a difficulty to increase and extend their production due to little knowledge of farm management including information on effective farming, not enough nutritious animal feed and less land due to the growth of the cities. (Mani & Intodia, 2014) Another major problem farmers are facing is the difficulty to get access to credit, which makes it difficult to expand their businesses. (Ambani, 2013) On the other hand the private dairy sector is growing and the first concentrated animal feeding operations are now opening in India. This is a huge change which could affect the entire structure of the farming industry

since dairy produced this way can be sold cheaper because the animals are specifically bred to carry as much milk as possible and this is artificially enhanced with help of hormones and antibiotics. (The Economic Times 1, 2014)

#### 4.2.5 Indian Dairies

Since India is the world's largest milk producer it has the potential to play a large role in the dairy industry. The Indian dairy market is slowly transforming from a very traditional market to becoming more advanced using technology to increase productivity and meet the growing market demand. Thanks to this transformation, dairies can supply the milk in different value-added forms resulting in the dairy sector to have a higher value addition than other agriculture products in India. Approximately 35 % of the produced milk is processed but the organized dairy sector only accounts for roughly half of this amount, hence the rest is processed in the unorganized sector. In the organized industry roughly 80 % of the milk is used for pasteurization and the remaining 20 % for butter, cheese and milk powder. In 2010 the organized dairy sector had a registered capacity to be able to process one-third of the total milk production. (S. R. Singh & Datta, 2010)

As mentioned, the largest part of the produced milk is still not processed by the organized sector but consumed directly or sold to close-by areas by local milkmen. In 2012 only 0.3 % of all costs associated with the milk industry could be assigned to machinery for processing. (Euromonitor International 1, 2013) However, the demand for processed dairy products from the organized sector is growing due to change of lifestyle, higher income and better awareness of food safety and quality. As a consequence the organized dairy sector is growing and is predicted to keep expanding. At the moment there exist two main types of companies processing raw-milk to value-added dairy products; privately owned processing companies and dairy cooperatives consisting of a large number of farmers. (S. R. Singh & Datta, 2010)

The private companies have appeared on a larger scale on the market more recently due to the vast number of deregulations. Usually dairy farmers are paid for the milk they provide depending on fat content, volume and solids-non-fat content. (Mani & Intodia, 2014) However, some of the MNCs have experienced difficulties to develop strong procurement networks and often a backward integration can be necessary in order to compete with the

cooperatives. This can include providing dairy farmers services such as how to improve farm management, better animal feed, help with fertility, veterinary care and profit sharing with farmers. (S. R. Singh & Datta, 2010)

Even though private dairies are growing on the market it is most common that small-scale farmers who wish to engage in the organized market integrate forward in the supply chain by joining dairy cooperatives. This form of integration opens up the farmers' possibility to reach a larger market and gain access to capital such as processing and packaging equipment. (Datamonitor, 2014) In India the dairy cooperatives have a socioeconomic significance and employs millions of households. The main objective with the milk-cooperatives is to ensure a fair return for the milk farmers and due to this setup the price of raw milk is relatively high. The cooperatives core activities is to process liquid milk and other dairy products, operation planning, R&D, marketing and promotions. Normally the dairy farmers own the cooperative but a management team is recruited to run it. (Goel & Bhaskarkan, 2010)

The size of the dairies has grown since the ceiling for milk-processing capacity was removed in 2002. Larger plants have been established as a counter reaction of the growing demand for various types of processed dairy products and large companies including Nestlé India, Britannia and Hatsun Agro have built new or expanded their processing facilities. (Goel & Bhaskarkan, 2010) The largest player on the organized Indian dairy market is the Gujarat Cooperative Milk Marketing Federation Ltd (GCMMF) with almost 37 % of the market shares followed by Tamil Nadu Cooperative Milk Producers' Federation with 10.8 %. (Datamonitor, 2014) GCMMF has a wide range of products sold under several different brands including Amul, Sagar, Amulya and Nutramul. The company is a dairy cooperative and operates primarily in India but has some export to countries such as China, the US, Japan, Philippines, Australia and the Gulf Countries. The GCMMF has 3.23 million milk producing members. (Datamonitor, 2014)

The competitive landscape for dairies varies. The entrance of a small-scale dairy would not require huge amounts of capital and could probably fairly easy reach a local market. However, if the aim is to challenge the major companies and sell to the mass-consumer market there exist higher entry barriers. Due to this, it is becoming increasingly common with expansions through mergers and acquisitions since it is deemed to give a better competitive

advantage. By this type of expansion the companies can faster achieve economy of scale and reduce overhead costs leading to higher profit levels. Another barrier for new operators to enter is the importance of brand value to attract end-users; many of the large dairies have strong brands with high customer loyalty. (Datamonitor, 2014)

Over the past few years the dairy market has been volatile with fluctuating prices. The need of expensive specialized machinery for processing causes the exit costs to be high. (Datamonitor, 2014) However, the prognosis for the organized dairy sector is bright even though in order to succeed and profit on the enormous potential, the organized sector needs to improve its penetration to increase the profitability of the value addition of milk. One large barrier for the market's development is the supply availability. To address this problem, dairies have tried to gain a competitive position by introducing sourcing strategies. Different companies have used different strategies including joint-ventures with regional farmers, development of their own milk production, building a network with the help of commission agents, subsidize different machinery such as milking machines, cooling tanks and sheds to high-yielding farmers. (Goel & Bhaskarkan, 2010) It is important to put in place a working payment method that the milk farmers trust, have a transparent milk procurement system in place and build chilling facilities in villages or intermediate levels to increase quality and food safety. (S. R. Singh & Datta, 2010)

#### 4.2.6 Future Challenges and Opportunities

In 2013 roughly approximately 300 million cows and buffalos produced 135 million tons of milk. Even though this looks like impressively high numbers, the figures actually imply that the productivity in the dairy sector is quite low. Several factors can explain this and the dairy sector faces many challenges. But some of them can be developed to future advantages. To begin with, the dairying sector is to a large extent unorganized and the main part of the consumer depends on supplies from rural households. Apart from the supply chain being insufficient these animals do not produce milk at their maximum capacity due to lack of nutritious animal feed, health care and inadequate farm management. (The Economic Times 1, 2014) These factors cause the prices on raw milk to rise, which the government is trying to counteract by providing subsidies and assistance, though only to cooperatives and dairies that are state-supported. (Mani & Intodia, 2014) The growing demand, both domestic and in other

developing countries, can be a great opportunity for India, but in order to capitalize on the development, the Indian market needs to increase its competitiveness hence keep low prices. This can be achieved by finding ways to keep cost of production down at the same time as the productivity of the animals increase. Furthermore, in order to satisfy the increasing domestic demand as well as developing the opportunity of becoming an exporting nation the production process needs to improve. Better production, processing and market infrastructure is needed to guarantee both volumes and quality requirements. Another advantage the Indian market should develop and further specialize is the uniqueness of the Indian dairy industry; the large amount of produced buffalo milk. This way India could focus on producing specialty products such as Mozzarella cheese and target specific customers. (Karmakar & Banerjee, 2006) Despite the factor that the sector is not even close to its full potential, it is still revenue generating and is expected to double these revenues over the next years. (The Economic Times 1, 2014)

### 4.3 Existing Circular Return Strategies

In this sector the current use of rental services and remanufacturing in India will be explored. The information presented below is collected from various sources in the literature and hence are not part of the empirical data collection.

#### 4.3.1 Rental in India

The Indian market offers many opportunities for the equipment rental segment and in some ways it can be superior to other international markets. This is mainly due to the large size of the Indian economy and the high growth rate of the market. However, until recently the market for rental was moderate and its expansion was not as fast as expected. One reason for this is the low awareness of the advantages with rental and the low number of rental companies operating on the market. The contractors are not yet willing to pay a higher price for new equipment and some rental players do not want to sublet new equipment since they do not trust the contractors' cautiousness of the products. Consequently it is mainly old equipment that is contracted on the Indian rental market. Lately the situation has begun to improve and increased demands for newer products have been identified. (Euromonitor International 2, 2013)

The rental market for agricultural, construction and other machinery has shown an annual increase of 13 % from 2007 where the agriculture industry is the major contractor representing 41 % of the rental contacts. The revenues from the rental industry are expected to continue to grow with a yearly increase of 16 % until 2018. As the rental market continues to grow and an increasing number of organized rental companies penetrate the market, the contractors' awareness of the benefit with rentals increases. The equipment users in India have started to realize how renting equipment can decrease their initial investments cost. (Euromonitor International 2, 2013) The main obstacle for the growth of the Indian rental business is the difference in tax structures between the Indian states. (International Rental News, 2011)

#### 4.3.2 Remanufacturing in India

The remanufacturing in India is today limited and the main recovery options used currently are reuse, repair and recycling. These activities are mainly executed by the informal sector and the formal sector is only marginally involved in the managing of the end-of-life for products. In January 2004 the *Municipal Solid Waste Management Rules 2000* was implemented and even though it is questionable if it has managed to enhance disposal recovery, India is still the country in the world that reuses the most. This is a result of the large amount of people living off waste collection and recycling, resulting in the reuse of 70 % of all plastics and metals in India. However, the tradition of reusing, sharing and recycling are being threatened by increased consumption possibilities and a rising demand for new products. (Rathore et al., 2011)

Because of population growth and rising environmental issues the need for a transformation to a sustainable waste management exists and due to this a few companies like Xerox India and Timken Bearings have started a remanufacturing business. Cheap labor costs and a price-sensitive market in addition to the rising environmental impact motivates a growth of the formal remanufactured business in India. Some companies like GE healthcare and Caterpillar emphasize the importance of the remanufacturing business in India and are expanding their remanufacturing business on the market. (Rathore et al., 2011)

Sharma et al. (2014) has studied the drivers and roadblock for remanufacturing in India. The drivers are divided into economical, social and environmental drivers. The study reveals that the possibility to offer a lower price, maintain the embodied value and achieve significantly lower input costs are the three main economical drivers for remanufacturing. Since remanufacturing is the highest level of product recovery it is viewed as the top environmental driver in India and the establishment of a positive image is the main social driver for remanufacturing in India. Many customers are skeptical towards remanufactured products and believe that the durability is lower than for new products and that more maintenance is needed. Consequently quality concerns and a negative end user perception are seen as obstacles for the remanufacturing businesses in India. (Sharma, Garg, & Sharma, 2014)

The industry for construction equipment in India has big potential and the country focuses on improved infrastructure. (International Rental News, 2011) Global companies such as Volvo Construction Equipment and Caterpillar have realized the opportunities the Indian market has to offer and have developed growth strategies to achieve strong market positions. (NBMCW 1, 2011; NBMCW 2, 2011) Both Volvo and Caterpillar have launched remanufacturing programs with the objective to encourage their customers to keep their equipment for a longer amount of time. (Sharma et al., 2014) Caterpillar offers remanufactured products with the same warranties as a new machines and therefore the only difference for the customers is the approximately 50 % lower price. (NBMCW 1, 2011)



## 5 Empirical Data: The Case Company in India

*This sector will entail information about the case company's market company in India. In this chapter the case company's operations on the Indian market is described as well as the nature of their existing customers. In the end of the chapter, a reflection from the collected information is made and customer segments are identified along with values and requirements for these segments. Moreover, the future development of the dairy markets and its implication for the case company is identified.*

### 5.1 Presentation of the Interviewees

Data has been gathered on the case company's operations on the Indian market with a particular focus on the customers' values and requirements. Some internal sales figures has been used to gain an understanding of the case company's position on the market. In addition three interviewees were asked to share their views in order to get a thorough understanding of the Indian market and the market company in India. The first interview was conducted with LM who has been working on the Indian market for two years. He is currently the director for the case company's production site and for the Indian BU. The BU is both a manufacturing unit and a marketing unit that supports the Indian market company. (LM, 2015) The second interview was conducted with DC, currently working as cluster category leader in the South Asia region, where the Indian market plays a significant role. In addition, until the end of year 2014 DC worked at the Indian market company and was responsible for the sales and sales results for equipment in India. (DC, 2015) Lastly an interview regarding specific customer requirements for different customer segments was performed with SK who works as a sales manager at the market company in India. (SK, 2015)

### 5.2 Market Characteristics and Growth Potential

India is the world's largest milk producers but the Indian market is in many ways very different from most other dairy markets. The food culture and traditions differs significantly from the European and American markets causing the end customers to consume milk products in different manners and contexts. As an example, most milk is traditionally consumed heated instead of chilled and breakfast cereal would, for example, normally be

served with warm milk. Furthermore, the majority of the milk is consumed as loose milk i.e. milk that has not been processed. However, as the demographics are changing and a greater proportion of the population works outside of the household, the demand for prepared food and storable beverages increases. These changes lead to more milk being pasteurized and the market for both aseptic milk and chilled milk are growing. Great potentials for the case company are identified in the chilled milk market while the growth of the aseptic market is growing at a slower pace. The Indian end customers often boil their milk before consuming it, which could be an explanation to the lower growth rate for aseptic milk. The political situation and poor infrastructure do also affect the development rate of the dairy industry. (LM, 2015)

The Indian milk processing capacity is expected to experience a significant growth in the coming years (DC, 2015). The market will also be affected by the fact that there will be an increasing number of international companies on the Indian market in the future. Furthermore, increased export of Indian dairy products produced by local companies will affect the requirements on the processing equipment and international standards will be needed to a larger extent. With the help of a larger number of employees the market company wishes to enable growth and gain more market shares. (LM, 2015)

### 5.3 Production Plant and Product Range

The setup for the case company's market company in India differs from their operations in most other countries since the production is performed locally. A production site was established many decades ago mainly because of lower labor and production costs. Initially, the components were not produced in the factory but nowadays most of the components are produced locally and the majority of the Indian business is handled directly by the market company. During the last five years the main part of the components sold to Indian customers were produced in the Indian factory. (Internal database 2, 2015) The range of components produced in India differs from the regular product portfolio. The Cleaning In Place (CIP) components have in general lower-capacities than machines with similar specification produced by the case company in other parts of the world. Furthermore, models with lower amount of automation and product specifications, called take down components, are

manufactured and sold exclusively on the Indian market. The take down models require manual cleaning and consequently have a shorter uptime than CIP components. This means that the take down components process smaller capacities and are sold to a lower price. The product characteristics of the take down models makes it a good fit for the price-sensitive Indian market where labor costs are low and many smaller dairies do not require constant processing. (RM, 2015) Historically the take down components are in higher demand than the CIP models and during the last five years a large part of the installed components in India are take down models, see figure 9. (Internal database 2, 2015)

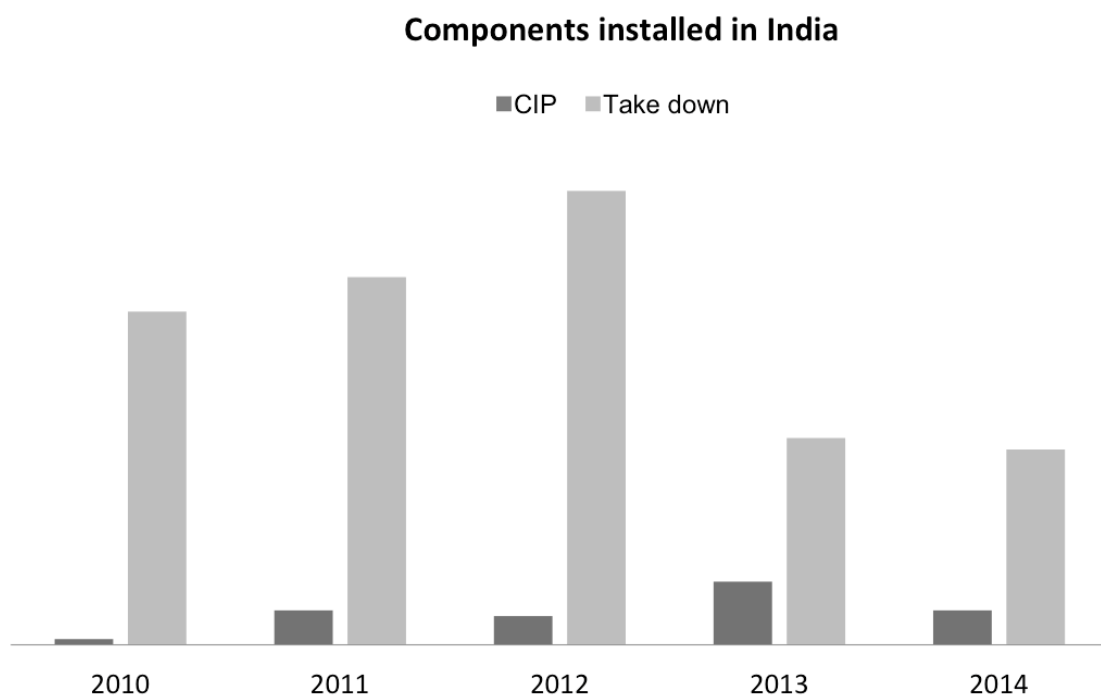


Figure 9. Installed components in India during the last five years divided by take down components and CIP components.

## 5.4 The Customers

The Indian dairy market for processing equipment is very fragmented and consists of a huge number of small, local customers. Currently the market consists of several hundred potential customers for the case company and a large additional number of small capacity customers that are deemed to small to be of interest for the case company at the moment. The potential

customers are scattered across the country and generally located close to their consumers as a consequence of the hot climate and the lack of extensive cold chains. (LM, 2015)

The complex competitive landscape for dairies on the Indian market results in many MNCs preferring to enter the market by joint ventures or acquisitions of local private dairies. The presence of large global companies is predicated to increase and many MNCs are penetrating the Indian market. Only during the past year international companies purchased three private dairy companies as a way to penetrate the market and this development indicates a future consolidation of the customer base. However, due to the structure of the agricultural sector the change will be a slow process and the entering of MNCs will initially act as a compliment for the fragmented market. (LM, 2015)

#### **5.4.1 The Customer Segmentation Used by the Case Company**

The Indian dairy customers can be divided into cooperatives and private dairies. Out of the case company's current customers on the Indian market approximately 30-40 % are cooperatives whilst 60 % are private companies in terms of number of customers. However, the cooperatives generally have plants with bigger capacity while the size of the private dairies varies between small, medium and a few large capacity plants. The private players can be segmented into local dairies and MNCs, such as Nestlé. The local private players, on the other hand, may be further divided into "value buyers" and "solution seekers". Solution seekers in general ran greater capacities than the value buyers. Also the cooperatives can be further segmented into medium- and high capacity cooperatives. Figure 10 shows the customer segmentation used by the market company in India. (DC, 2015)

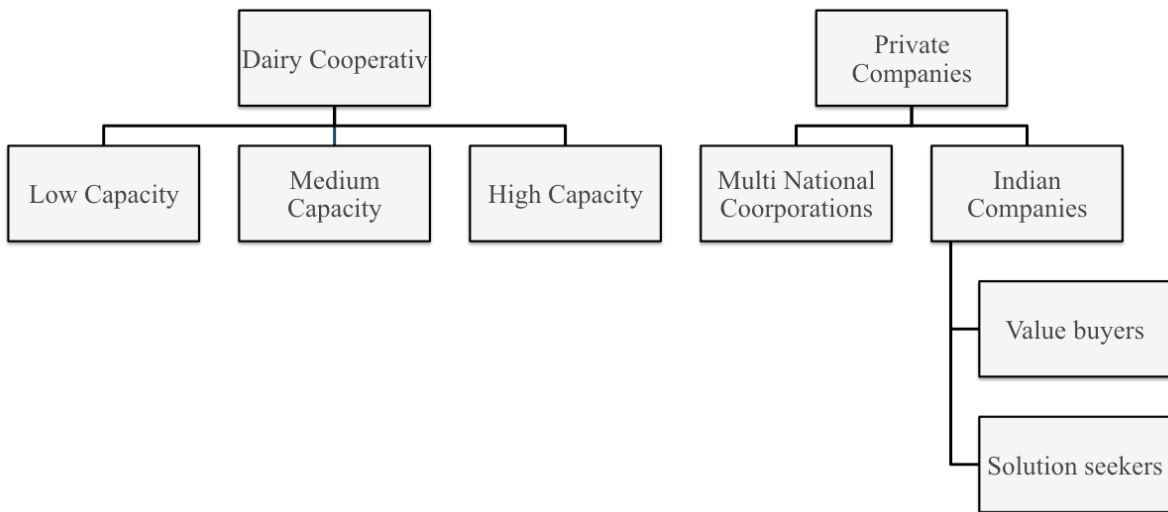


Figure 10. The customer segments currently used by the Indian market company (DC, 2015).

Sales figures from the last five years shows that the Indian market company has had a large number of different customers where the majority purchased only one component. Figure 11 demonstrates the division between the market company’s different customer segments for the 12 largest customers the past five years. As can be observed the two significant customer segments are the dairy cooperatives and the private Indian companies. (Internal database 2, 2015)

**Sales Divided by Customer Segment**



Figure 11. Division of customer segments for the 12 largest customers the last five years (Internal database 2, 2015).

## 5.4.2 Factors Affecting the Customers' Investment Decision

In general, the Indian customers are price-sensitive and prioritize a low investment cost over a low TCO. This can be the consequences of a number of factors such as uncertainty regarding growth on the dairy market, unknown capacity demands and the general rapid development of the country, which lead to doubts about the future investment needs. These are common characteristics for all customer segments but there also exist some differences between their investment decisions. The cooperatives generally base their investment decision explicitly on price in relation to performance guarantees. Processing equipment companies are normally asked to hand in tenders based on a performance specification to this customer segment and the lowest bid that manages to fulfill the requirements gets the business. For the private dairies, on the other hand, price is an important factor. However, they also put emphasis on processing solutions, uptime, product quality and product losses. Furthermore, some customers in the private company segment do take the TCO into consideration unlike the cooperatives, although they do not consider it as important as customers in most other countries. There are also some MNCs operating on the Indian market including Coca-Cola, Pepsi and Nestlé. In India many MNC still have requirements of an international standard within many areas, nevertheless low investment cost are requested to a higher extent in order to produce products that have competitive prices matching the Indian market. (LM, 2015)

Most customers consider the same key requirements from suppliers when purchasing a component and the four most crucial determinants are: price, reliability, machine performance/specification and service. However, the importance these parameters play for the customers' decision varies. The value buyers are more price-sensitive and the solution seekers put more emphasis on the machine performance and reliability. The cooperatives are mainly focused on a low price and do not as highly consider the services provided and the machine performance. In general they do not bear TCO in mind when they make investment decisions and it is not an important consideration for many local private dairies either. (SK, 2015)

## 5.5 The Competitive Landscape

The competition on the Indian market is fierce and is expected to increase in the future. At the moment the case company has primarily one big competitor in India that is also acting globally. Other local competitors within the market for CIP component do exist, but the private dairies favor MNCs such as the case company and its main competitor over these suppliers of components. However, the private dairies' preferences between different MNCs vary and they usually purchase the component that is most suitable for their requirements and budget. (DC, 2015) Moreover, the governmental organization NDDDB is acting as a counterpart towards the international processing companies to lower the prices. (LM, 2015)

The case company currently has a strong position on the market for take down components and many customers buy several take down components instead of one CIP component resulting in a lower demand for these. However, the case company's main competitor recently launched a take down model and the impact of their entry in this product segment is uncertain and will need further assessment in the future. The case company's CIP components do not hold the same strong market position due to a significant higher price in comparison to competitors. Product quality is not an important differentiator on the Indian market, which might be a reason for the case company's limited market coverage. The development of an appropriate product specification corresponding to the market's demand and the creation of competitive prices are prioritized activities for the market company in order to increase the case company's market share. (DC, 2015) To ensure that the case company seizes the opportunities on the Indian dairy market it is necessary for the company to keep up with the development of the chilled milk market. Furthermore, the case company needs to develop even cheaper processing solutions, establish a strong brand awareness and offer equipment that handle a wider range of applications. (LM, 2015)

## 5.6 Circular Return Strategies

Existing circular return strategies on the Indian market are limited and currently not used by the Indian market company. Nevertheless, there are a few local companies specialized in sales of used components and some customers prefer refurbished products over new due to the

lower price. These customers are primarily private dairies that request refurbished take down components. As a response to this demand it happens that the market company sells components that have been refurbished in the local factory. (DC, 2015)

The case company in India has not tried leasing of equipment and does not know any competitors using this business model either. It is believed that the dairy cooperatives in general would prefer to own their equipment and leasing would therefore not be an ideal option for this customer segment. Deferred payments for other segments, however, are an option that could be further explored. (DC, 2015)

The customers could be interested in both leasing and remanufacturing of components. Use of these two business models could be a way to reach more price-sensitive customers due to the lower capital investment needed. It could also improve the customer relationship in some customer segments. The better the warranties for refurbished components are the easier it will be to sell them, but it is not a requirement that the warranties are the same as for new sales. (DC, 2015) Before the Indian market company can implement it, extensive cost calculations are required as well as an evaluation of the market demand. (LM, 2015)

## 5.7 Reflection

### 5.7.1 Customer Segments

According to the reviewed literature, dairy cooperatives and private companies are the two main types of dairies and are therefore two interesting customer segments for the Indian market company. This is aligned with the current customer segmentation used at the market company as described by DC (2015) and is an important division between customers. The market company in India has then further sub-categorized customers. The dairy cooperatives are segmented after requested capacities and the private segment is divided in Indian companies and MNCs. In addition, the private Indian companies are divided in value-buyer versus solution-seeker. In figure 12 the correlating segments between the literature and the Indian market company is shown.



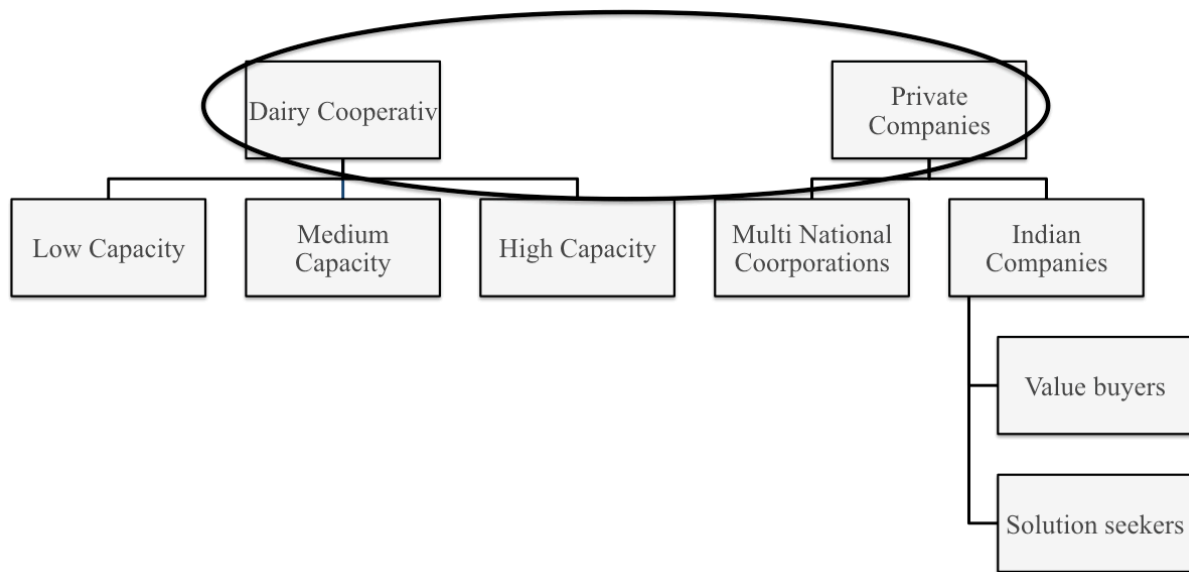


Figure 12. The circle shows the alignment between the Indian market company's customer segmentation and the customer segments mentioned in the literature review.

LM (2015) and DC (2015) both stated that MNCs differ in several ways from the private Indian companies and because of this they are often viewed as two different customer segments and handled in different ways by the market company. Apart from these three important customer segments, recognized by both the case company and the literature, a fourth was identified when analyzing the internal sales figures from the last five years. The second largest customer segment according to recent sales is not private dairies but local System Integrators (SI). This type of companies typically buy stand-alone components from a range of different manufacturers and then sell processing lines to dairies, hence they act as a middleman. DC (2015) explained that this group of companies also is segmented under private Indian companies. It can be discussed if this is the most appropriate approach. As can be seen in figure 13 showing the total unit sales for the 12 largest customers 38 % were to SI which are other processing equipment companies delivering processing solution. However, this might be a misleadingly high percentage, a rough estimation of all customers during the last five years indicates that around 20 % of all components installed were for this type of company.

### Sales Divided by Customer Segment

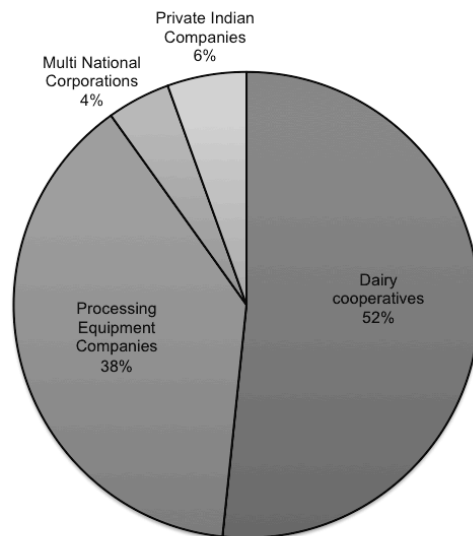


Figure 13. The division in unit sales between the customer segments for the 12 largest customers during the last five years (Internal database 2, 2015).

The SI are currently not viewed as a customer segment at the market company in India and therefore DC (2015) confirms that there does not exist any specific strategies targeting this segment. However, since the sales figures reveal that this has been a large customer segment lately, it could be important to learn more about how their decisions are made and who the end customers are. In order to give a holistic picture, the market will be divided into three customer segments in this project: dairy cooperatives, private Indian companies and MNCs. To look at the MNCs as a separate customer segments is preferable due to the large differences in capacities and demand for international requirements. It would have been interesting to further study the SI but since they are not end customers and since there is limited information about this segment the SI will not be subject for this study. Further sub-categorization will not be used in the analysis since DC (2015) and reviewed literature indicate that the investment making process within each of these segments is similar. Since the most relevant aspect of the customer segments in this project is factors affecting the decision-making process, values and requirements, further divisions are deemed irrelevant. The concluded customer segments that will be used for this project can be viewed in figure 14.

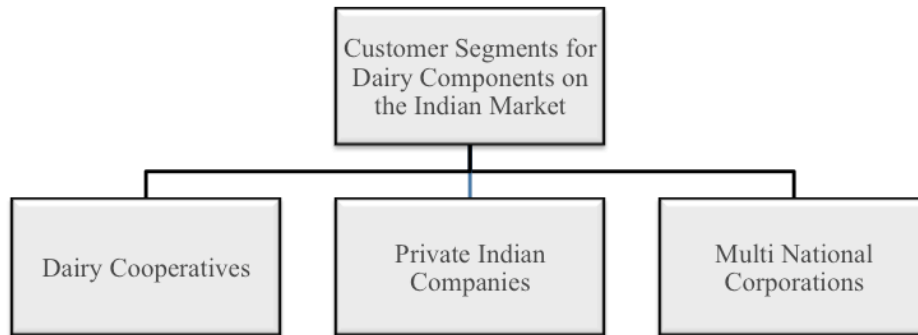


Figure 14. During the project the three customer segments dairy cooperatives, private Indian companies and MNCs will be evaluated.

### 5.7.2 Customer Values and Requirements

One objective with effective customer segmentation is to better meet the customer requests and implement successful sales strategies to meet specific customer demands. LM (2015) and DC (2015) concluded that the identified customer segments have different purchasing processes and values that affect the investment decision. This further stresses the importance of specific sales strategies for the different customer segments. Despite the significant difference between the customer segments' purchasing processes the most important decision factors are the same. The price is the most crucial determinant, which is supported by both the literature and the interviewees. Another common characteristic for most Indian customers is that they do not consider the TCO and almost exclusively consider the upfront investment cost associated with the purchase. This customer behavior is motivated by a number of reasons. To begin with, many of the local companies lack extensive funding and securing a loan from a bank or a financial institution can be difficult. Secondly, many companies have a very short investment horizon since they cannot predict the need of future investments as easily and therefore TCO is less important since the pay back time needs to be short. Finally, many of the companies are in a growth phase and therefore constantly require investments in larger capacity equipment causing the liquidity to be strained. In general, the key values sought by customers on the Indian dairy market are the same, however, they have different importance for the three customer segments. As was revealed by DC (2015) and SK (2015) the main customer requirements are: price, reliability, machine performance/specification and service.

As LM (2015) described, the dairy cooperatives use tender based procurement processes causing this segment to consider the price of the components almost exclusively when making an investment. SK (2015) explained that the services provided and the machine performance are not as crucial for the investment decision as long as the components are reliable. For this reason the case company's components can at times be perceived as over specified.

As stated above the price is also among the most important decision factors for the private Indian dairies, however, it is not as important for this segment as for the cooperatives and a few private Indian dairies do consider TCO when making a decision. Nevertheless, the price affect on the investments decision is more crucial for smaller dairies than bigger. According to DC (2015) the bigger the dairy is the more the other factors, such as reliability and service offers, influence their decision. The private Indian dairies prefer processing equipment sold by MNCs, such as the case company, to the products offered by local suppliers. However, they do not have any specific preferences between different MNCs providing processing equipment.

According to SK (2015) there are similarities between the product requirements and decision factors for the multinational dairies and the other customer segments. However, since these dairies are acting on the global market they sometimes have higher requirements to meet international standards on dairy products. The price is not as crucial for this customer segment since they often are more financially strong than the other two segments. Nevertheless, since most MNCs operate on the Indian market and therefore need to offer their customers very low prices to stay competitive, a lower initial investment cost is still a consideration before making an investment. Due to the higher capacities produced by MNCs the reliability of the machines is very important as well as its specification.

In table 5 the importance of different customer requirements for the dairy cooperatives, private Indian companies and MNCs have been concluded in order to give an overview of the similarities and differences.

|                            | <b>Dairy Cooperatives</b> | <b>Private Indian Companies</b> | <b>Multi National Corporations</b> |
|----------------------------|---------------------------|---------------------------------|------------------------------------|
| <b>Price</b>               | • Extremely important     | • Very Important                | • Important                        |
| <b>Reliability</b>         | • Important               | • Important                     | • Very Important                   |
| <b>Machine Performance</b> | • Not a large factor      | • Not a large factor            | • Very important                   |
| <b>Services</b>            | • Rarely considered       | • Not a large factor            | • Important                        |

Table 5. How the different customer segments values the four different factors when making an investment decision.

### 5.7.3 Future Market Opportunities

The fact that the Indian market for dairy processing equipment is growing and developing was clear from both revised literature and conducted interviews. However, at what rate and to what extent it is growing can be discussed further. According to LM (2015) the growth will not be comparable to the one experienced in China since consumption habits still largely include unprocessed milk. In the literature indications are also found supporting that the development will be gradual such as the structure of the fragmented agricultural sector, which will take time to evolve. Another indication is the high status of the cow in the Indian culture, which could make implementation of western so called “dairy factories” hard. Nevertheless, the growing middle class and change in demographics, where women to a larger extent work outside of the household, will lead to changes in consumption patterns. More value-added products will be requested as the women, who traditionally prepared the dairy products at home, will have less time for cooking. In addition, the higher income levels will cause for a demand of more nutritious food and the end-consumer will put higher value and requirements on food safety, which will be beneficial for the organized dairy sector.

LM (2015) believes the competitive landscape for the case company will keep evolve as the case company’s main competitor enters the customer segment for take down components. Furthermore, local producers will probably develop machines with higher performance, which will also increase the competition. However, the number of customers of interest for the case company will probably increase as well since more MNCs will enter the market and this

customer segment is usually less price-sensitive and put high value on reliability and performance. In addition, as exports of dairy products are expected to increase as well in the future, many Indian dairies will need processing equipment with a higher standard. Furthermore, the customers will consolidate and as a result the number of customers requesting larger capacity equipment and higher uptime will increase. SK (2015) and DC (2015) expect this will lead to a larger potential to sell more CIP component as well as a continuing strong demand for take down models from smaller customers in the private segment in particular. All customer segments are predicted to grow. However, the structure of the market and political initiatives such as the NDDB will result in a slightly higher growth potential for the dairy cooperatives. In table 6 different development factors on the Indian market that could affect the future growth of the case company are presented.

| <b>Change in area</b> | <b>Factor</b>                                  | <b>Implication for the case company</b>                                   |
|-----------------------|--|---|
| <b>End-consumer</b>   | Change in demographic                          | Less loose milk and higher demand for value-added dairy products          |
|                       | Growing middle class with higher income levels |   |
|                       | Higher requirements on food safety             |   |
| <b>Customer base</b>  | Consolidation of customers                     | Higher requirements for processing equipment and larger capacities needed |
|                       | More MNCs on the Indian market                 |   |
|                       | More export of value-added dairy products      |   |

Table 6. Expected future developments on the Indian dairy market and its implications for the case company.

## 6 Empirical Data: Cases and Examples of Circular Return Strategies

*So far in the report information regarding the theory behind the business model circular return strategy and its applicability on the case company has been presented. Furthermore, the structure of the Indian dairy market and the market company in India has been examined and discussed. In this sector cases using different circular return strategies will be presented as a way to investigate how the theories are applied in reality. One external case conducted for the vehicle manufacturer Volvo Group will be presented and its global circular return strategy Volvo Exchange Parts will be explained. In addition, some of Volvo Group's experiences from the Indian market will be presented in order to gain a larger understanding of the Indian customers. Moreover, internal cases from the case company will be presented, including the American and Chinese market companies' experiences of product recovery and the customer perception of these recovered products. Furthermore, an ongoing pilot project, investigating the opportunities for the case company to increase market shares by introducing leasing as an alternative business model, will be described in this sector. The chapter is concluded by a reflection where the customer requirements for recovered products are identified. The information is to a large extent empirical and collected through a general interview guide approach.*

### 6.1 Volvo Exchange Parts

#### 6.1.1 Volvo Group and the Concept of Volvo Exchange Parts

Volvo Group is one of the world's leading manufacturers of different types of transportation equipment and was founded in Sweden in 1927. Included in Volvo Group's manufacturing portfolio are vehicles such as trucks, cars, buses, construction equipment and marine engine systems. The Volvo Group brand is a premium brand that is recognized around the world and associated with high quality and safety. (Volvo Group, 2015)

*Volvo Exchange Parts* is a business model used within the Volvo Group including the concept of return logistic for used spare parts and the distribution of remanufactured exchange parts for all Volvo Group companies. The worn-out part, the core, is returned from a dealer to a

Volvo Group core hub. The condition of the core determines whether it is sent for remanufacturing or is discarded and recycled. At the remanufacturing plant the cores are disassembled and each part is thoroughly examined and cleaned from corrosion before being restored and assembled to a technically new condition. In the last step the remanufactured exchange parts are tested to ensure quality, durability and performance. The same warranties are given on exchanged parts as newly produced parts. Up to 85 % of the product's core can be reused and the setup is in line with Volvo Group's values: quality, safety and environmental care. (Volvo Trucks, 2014)

Two interviews have been conducted with former Volvo Group employee Christian Johansson and the current employee Martin Twedmark. Christian Johansson worked as a Logistics Manager for Volvo Parts AB between 2004-2006/2007 with responsibilities within purchasing and call-offs from suppliers. Furthermore, he was working with internal warehouse control with a main focus on exports to Brazil and South America. Martin Twedmark has been at Volvo Group for ten years and currently holds the position as Manager for Core Management at Volvo Group Truck Operation, Remanufacturing. His main responsibilities lie within return logistic and coordination of the flow of exchange parts from retailers to workshops for all Volvo Group companies. In addition, Twedmark has some experience working with the Indian market since he performed a pre-study in 2009 evaluating the potential to introduce the concept of *Volvo Exchange Parts* in India.

### 6.1.2 The Circular Return Strategy at Volvo Group

Volvo Group generates a large proportion of revenues from after-sales service and sales. Due to a competitive landscape, with many competitors and suppliers offering Volvo Group spare parts at a low price, Volvo Group has developed a circular return strategy increasing customer loyalty and sales of spare parts. (Johansson, 2015)

The business model, named *Volvo Exchange Parts*, works as a circular return strategy between Volvo Group and its resellers and helps guarantee that the resellers will return used parts to Volvo Group. When a reseller receives a vehicle from an end-customer that is in need of repair or service, the reseller can order exchange parts from Volvo Group. These remanufactured parts have the same warranty as new parts and have been restored to a



technically new condition, however since they are remanufactured used parts they have a more competitive price; on average 30 % lower than that of a new spare part. In order for the reseller to be entitled to buy an exchanged part, a broken used part must always be sent to Volvo Group. To guarantee this is done the reseller needs to pay a pledge when receiving the exchange part; the sum of the pledge and the exchange part is often similar to the price of the same part new. The pledge is refunded when the reseller sends back the used part that the exchanged part is replacing, however, the used part must fulfill certain quality criteria for the pledge to be repaid. If the reseller performs the repair they can easily evaluate if the broken part meets the criteria. In other cases i.e. the end-customer performs the repair or use other workshops they will often have to pay the pledge until the condition of the broken part has been evaluated. How this is handled is decided by the relationship between the reseller and the end-customer and the general business climate. The main structure of the business model described above can be seen in figure 15 and this model is internally called Upfront. However, depending on the local market and legislation a model called Deferred can also be applied. It is similar to the Upfront model but instead of using a pledge the reseller pays the price of the exchange part and gets a debt in the form of a pending invoice with the same amount as the pledge would be. If an approved used product is not returned within a pre-agreed timeframe the reseller is required to pay the invoice. (Twedmark, 2015)

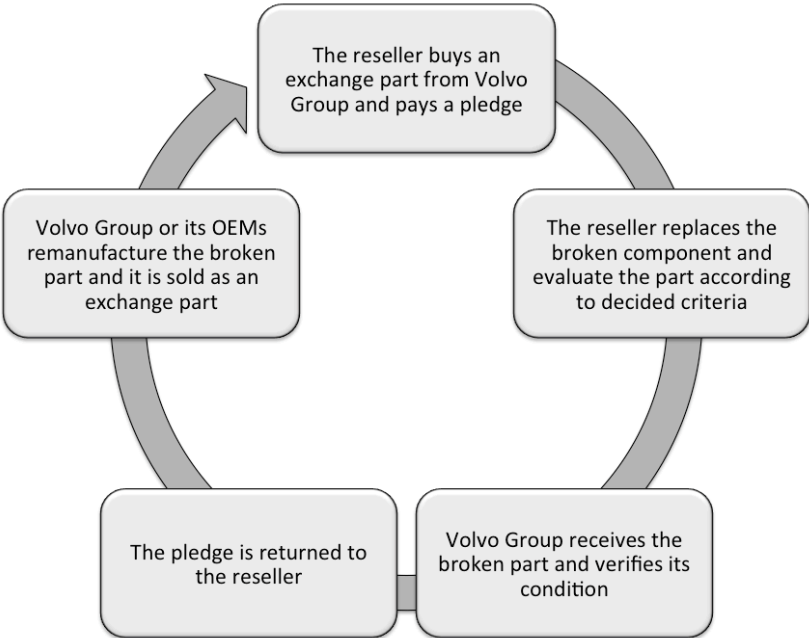


Figure 15. The Upfront model as applied by Volvo Group, adopted from Twedmark (2015).

The setup of this business model is limited to focus on the most expensive parts, such as engines, turbo and gearboxes. The returned parts that fulfill the quality requirements are most often sent to its OEM to be remanufactured before Volvo Group puts up the parts for sale as exchange units. The spare parts that are not possible to recover will be recycled or disposed. In order to guarantee top quality, a used part is always disassembled part-by-part before assembled and sold as an exchanged part. (Twedmark, 2015) Thoughts from circular economy are identified in Volvo Group's business model for exchange parts and the key driver for its development is economical benefits. However, the model manages to both decrease the environmental impact, obtained by the reuse of parts, and to be financially beneficial due to higher customer loyalty and increased after-sales of services and spare parts. (Johansson, 2015)

The setup of this circular return strategy has often not been directly requested by customers but is a response to a customer need identified by Volvo Group. It is a way to compete with other brands but still keep the premium quality of Volvo Group's spare parts. In general, the customer reactions to the use of exchanged parts have been positive and when introduced to a new market many customers change to this business setup as fast as possible. The demands for the recovered spare parts are high and have historically been higher than the inflow of used components. Due to this, the returned spare parts do not lead to high volumes of capital bindings and normally a remanufacturing of a used part is only initiated when a customer order requests that specific part. The exception to this rule is parts where Volvo Group experiences a constant demand and in these cases exchange parts are remanufactured and stored continuously. Volvo Group guarantees availability of exchange parts if the customer is signed up to the system, therefore if a customer requests an exchange unit that is out-of stock Volvo Group takes a new product, change the part number and sells it to the price of a recovered products. This needs to be taken into the calculations and is a necessary part of the business model since as long as a product has an upward sales curve the number of core will never be sufficient. (Twedmark, 2015)

The circular return strategy for exchange parts was initially developed for mature markets such as the European market. (Johansson, 2015) However, it is now implemented in a large number of countries and has proven to be a suitable business model for emerging market since

it allows for lower prices on spare parts. (Twedmark, 2015) Furthermore, Johansson (2015) considers second hand use of expensive, high quality equipment as an option for expansion on emerging markets where labor costs required for remanufacturing are low but the initial investment cost for new products are high.

When deciding if a market is of interest to establish the concept of *Volvo Exchange Parts* a couple of aspects are analyzed. Cost and legal requirements are evaluated as well as the size of the possible customer base and potential cultural factors that could influence the business model. Many factors make the Indian market suitable for a setup of remanufactured spare parts. To begin with, the growing population and wealth opens up for a larger customer base that will keep expanding since India is still on its way to become a developed country. Secondly, the local market company experienced a demand for remanufactured parts among the customers for it. The competition on the market is fierce and expensive spare parts result in many customers preferring to use cheap local dealers for repairs and spare parts. In order for a premium, high quality brand like Volvo Group to manage the competition, especially in a developing country like India, they need to be able to offer their customers high value to a reasonable TCO. This is possible by providing remanufactured spare part, which means a lower cost for both the customers and Volvo Group but still guarantees the same quality. This setup also allows for Volvo Group to reach more price-sensitive customer segments and in that way increase the installed base. Thirdly, India is an interesting market since the development of the country has led to a construction boom, which in turn has increased the demand for products provided by Volvo Construction Equipment and hence spare parts to these machines. (Twedmark, 2015)

When the pre-study was performed on the Indian market, the local market company detected a large potential and as a response to this an investigation was performed. Firstly, the possibilities to use the existing setup i.e. already existing remanufacturing plants and warehouses in other countries was examined. However, the conclusion was drawn that to only setup a consolidation hub in India was not a viable option due to legal reasons and high import and export tariffs. In order to reach the market properly, local remanufacturing of used spare parts was the only way to obtain an acceptable cost-level. The pre-study therefore concluded that a workshop working with remanufacturing with an associated testing facility

was the preferred option. The poor infrastructure and legislations for both international business and national business between states make India a complicated country to operate in. These obstacles have contributed to a rather large timeframe for the project. Even though the pre-study, made 2009, deemed the Indian market to be profitable the setup of a remanufacturing plant is still in the start-up phase. (Twedmark, 2015)

### 6.1.3 Challenges and Advantages

The circular return strategy used by Volvo Group has its challenges including how to setup an effective supply chain. Another challenge Volvo Group has faced is how to properly market the true value of the exchanged parts. There is a large difference between the quality of Volvo Group's exchanged parts and of re-used spare parts put in by a local mechanic. Volvo Group needs to properly communicate and market that they perform advanced reparations with substantial testing and that the level of quality they achieve is as good as a new. (Twedmark, 2015)

When purchasing an exchanged part that has been remanufactured, Volvo Group provides its customers with the same warranty as a new spare parts but to a price that is on average 30 % lower. The remanufacturing of spare parts has not only been appreciated by the customers but is profitable for Volvo Group as well since remanufacturing is less costly than producing new components, therefore the margin remains the same even though the price is lower. Another advantage with the exchange part business model is longer service agreements between Volvo Group and its customers. Furthermore, from a sustainability perspective the setup is also favorable since it makes the product life cycle longer and the initial product design of many Volvo Group parts have been adjusted to ensure they can be remanufactured several times. (Twedmark, 2015)

The circular return strategy for exchange parts is very internally accepted at Volvo Group and has been up and running for 50 years. One way to acceptance was to have a strategic view and not regard it as cannibalizing on sales of new spare parts. It is important to have the whole picture in mind and realize that this circular return strategy brings lower cost to both customers and Volvo Group and simultaneously deliver similar margins as sales of new spare parts. (Twedmark, 2015) Volvo Group's customers are very receptive for the use of recovered

exchange parts and the business model is a way to broaden the offer and attract customers that are more price sensitive. Furthermore, it has led to an increase in total sales, expanded customer loyalty and a more favorable TCO for the products. (Johansson, 2015)

## 6.2 Circular Return Strategies at the Case Company

At the moment there does not exist any circular return strategy at the case company. However, many of the activities included in a circular return strategy are performed at the company but are not organized activities from the BU. One example is an internal trading site for second hand machines and spare parts between different market companies. The site is setup to resemble the popular trading site eBay and a market company with a surplus of used parts or machines can enter the specifications onto the site and interested buyers from other market companies can easily satisfy a demand they are facing. The setup allows market companies to interact directly with each other without the administration of going through the BU. (The case company, 2015)

The case company has conducted projects to reach price-sensitive customers by product development of low cost solutions. These projects have for example focused on lowering the variable cost by making equipment more energy efficient. This is also aligned with the case company's sustainability values. New business models to achieve low-cost solutions are viewed as an interesting approach to reach new customer segments, especially in emerging markets, but has not been further developed yet. (DB, 2015)

Historically the case company has performed some remanufacturing and before 2005 customers could request second hand components. The BU coordinated the remanufacturing of components, but an explicit business model for the second hand machines did not exist and the second hand business was not extensively promoted to customers. No guidelines for the return of used components existed and the setup was rather unorganized. When the market companies sold a new component to an existing customer they sometimes offered to take back the used component since they knew that the BU handled second hand machines. The component was returned to the BU and remanufactured so it could have the same warranties as new sales. The market companies contacted the BU if a demand for remanufactured components could be identified on the market. (RM, 2015)

Even though no specific strategy for the setup existed, a couple of hundred remanufactured components were sold between 1993-2014 in total, generating satisfying revenues. The average margin for these components was higher than the case company’s margin for new sales. (Internal database 1, 2015) (RM, 2015) As can be seen in figure 16 the remanufacturing business faded out in 2006.

Number Of Remanufactured Components Sold

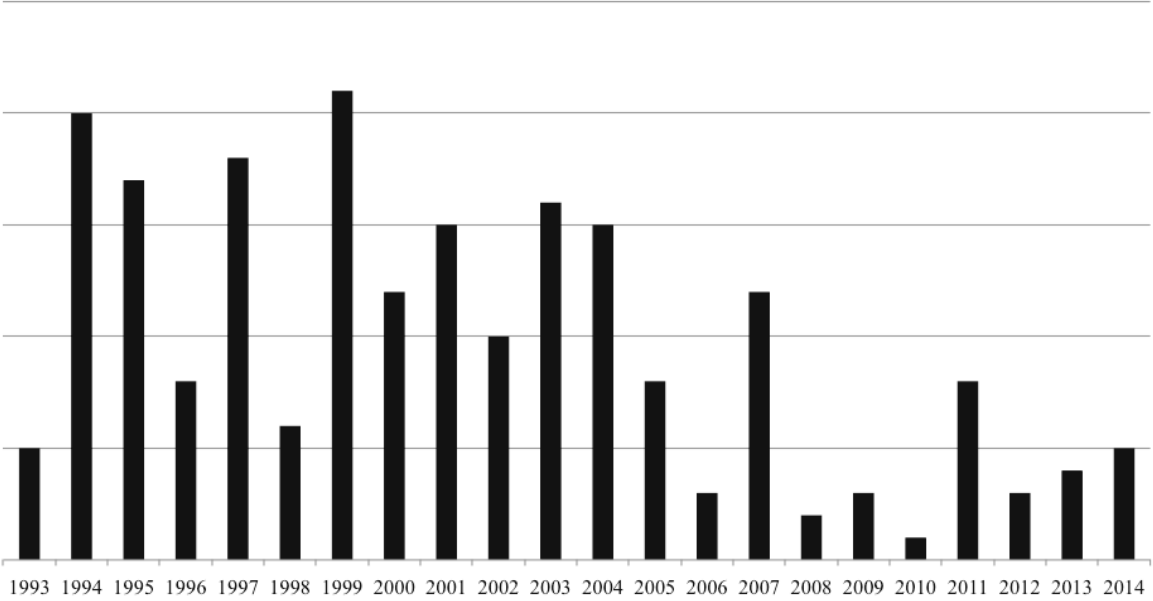


Figure 16. Number of remanufactured components sold each year (Internal database 1, 2015).

Nowadays no organized business model for remanufactured components exists at the BU, but product recovery is performed by some of the market companies. (RM, 2015) Second hand cases has for example been identified on the Brazilian market where import and export tariffs are high. Leasing and rental of equipment has been used on both the Chinese and the American market. Furthermore, a pilot project is currently under evaluation investigating the potential to reach existing and new customer segments by introducing a business model using leasing (NU, 2015). The choice of recovery option varies at the case company; in general the market companies perform a refurbishing while the BU does a more extensive recovery where

the products and components are remanufactured. The reason for the differences in recovery options is that the market companies do not have the constructions specifications and tools to perform a remanufacturing. However, the market companies run the same tests on the refurbished products as on newly produced equipment to guarantee the same performance. (RM, 2015)

### 6.2.1 The Chinese Market Company

An interview was performed with EL who works for the case company in the Greater China region. He has worked at the case company since 1998 and currently runs several projects including an investigation for leasing options on the Chinese market. (EL, 2015)

Historically, the market company in China has used a number of different activities included in circular return strategies. About 10-15 years ago, when China was still an emerging market, the case company had business models for both refurbished components and leasing. During this time the after sales organization handled the refurbishing and the used machines were sold with the same performance guarantees and warranties as newly produced machine. Machines were bought back from the customers and the buy-back price given was evaluated by a case company service engineer and based on a number of criteria. Leasing was performed both by the market company and through third party leasing companies. The leasing business was successful for a period of 3-5 years. However, the last decade neither leasing nor refurbishing has been used on a regular basis on the Chinese market. Rental services are still offered for a few key components but the rental business is not successful and therefore the machines are presently stored at a training center. (EL, 2015)

One of the reasons behind the challenges the recovered products face is the competitive landscape. Local competitors' quality and product specifications have improved over time but their prices remain significantly lower than the case company's offerings. Even though the price for the case company's refurbished equipment is on average 50 % of the price for their new machines, the price is still higher than the price offered by local competitors. Moreover, the market in China has changed during the last 15 years. The case company has experienced problems with Chinese companies that copy their product designs and then sell very similar

products to a lower cost. Hence, the competition is fierce and local producers often offer processing equipment to a tenth of the case company's prices. (EL, 2015)

The possibilities to lower the price through leasing are currently being investigated. However, in the interviews performed with customers the interest for leasing machines has been moderate. This can partly be explained by the fact that a significant characteristic for the market's customers is the importance of product ownership. It is traditionally important for Chinese customers to own their equipment, which can both be explained by cultural factors and the opportunity it provides for utilizing the property as a way to secure loans from banks and government. Other factors customer highly values when making an investment decision are the image of the brand and the price. (EL, 2015)

The current leasing project in China is primarily investigating the potential market for leasing to reach the middle-size customers. The middle-size customer segment typically consists of local dairies present in one city or region. Even though this customer segment is still of great importance for the case company the market has been consolidated over the last decade. (EL, 2015)

In order to be successful with alternative business models including activities such as leasing and remanufacturing, the timing on the market is crucial. EL (2015) believes it could be a viable option to reach more price-sensitive customer segments on emerging markets. It is important to have the full picture of the market and reach customers at a time when they are eager to invest even though they might lack substantial funding. A necessary requirement from the customers is to get the same warranties on refurbished and leased machines as for new machines. (EL, 2015) Refurbishing is currently not done on components in China, however, one BU has recently had cases where older processing equipment has been bought back when the customer wish to upgrading. These machines have then been refurbished and sold to smaller customers for a lower price but with a slightly shorter warranty. (ST, 2015)

Today the case company in China is facing some obstacles that could make implementation of circular return strategies complicated. To begin with, the structure of the market company might be a problem since the communication between the Chinese market company and the division of after sales would need to improve for remanufacturing to be an option. Secondly,



the factor that customers wish to obtain full ownership of their machinery would make leasing a challenging approach. Furthermore, the current fierce competitive landscape, size of the targeted customer segment and the case company's premium prices could complicate the implementation of new business models. (EL, 2015)

## 6.2.2 The American Market Company

The customers on the American market have a good attitude towards the usage of recovered equipment and many customers would consider buying refurbished machines if it corresponds to the desired requirements. The suitability for refurbished components depends on the customer order specification. As an example, refurbished machines are not favorable when customization of components is needed since this process is more difficult for used machines. Usually customization of processing equipment is required when multiple components are installed in a new plant and therefore refurbished equipment are rarely requested when customers order machines for these kind of projects. (KK, 2015)

Smaller customers, on the other hand, are prone to use refurbished equipment. The market company believes that customers wishing to buy used machines often procure these from companies specialized in pre-owned equipment. However, usually the condition of these machines does not meet the criteria that the case company requires, hence the market company will not offer equipment with such low standards to the market. (KK, 2015)

Due to the American market's demand for refurbished components the biggest challenge for the market company is to find used machines with appropriate specifications. Most of the used equipment available is over 40 years old and therefore obsolete. This results in a situation where the American market company has difficulties to meet the customer demand for recent generations of equipment. (KK, 2015)

When appropriate components are identified in the marketplace the used products are usually returned to the market company through a buy-back when the customer purchase a new machine. The returned machines are refurbished and sold to customers with the same warranties as new equipment but to a price of 70-75 % of the price for new machines. (KK, 2015)

### 6.2.3 Leasing Pilot Project at the Case Company

Leasing is not a business model used by the BUs at the case company. However, at the moment a pilot project is initiated at one of the Bus. The objective is to investigate the potential for leasing of stand-alone equipment. The pilot is inspired by a similar project currently running at another BU. During this pilot it has been decided that customers should be offered the possibility of financial leasing in combination with a binding service agreement. At the end of the leasing period the customer will be offered to buy the machine to a percentage of the initial price dependent on the number of years of the leasing contract. (NU, 2015) Even though the option of leasing has not been offered to the case company's customers before it is not unheard of within the organization. At other division of the case company it is common to lease machines to various customer segments using a model for operational leasing. However, due to longer depreciation time and the fact that the equipment remains on the case company's balance sheet, operational leasing will not be an option for this division of the case company. (ST, 2015)

The setup investigated in the pilot at the BU involves a three or five years long leasing contract with a fixed residual value of the initial price. The assumption is that many customers will buy the machine when the leasing period is over due to the favorable price. Furthermore, considering the life span of the machines the equipment is viewed as rather new after three or five years and with the service agreement the component will still have the same performance as a new machine. However, if the customer does not wish to purchase the machine after the leasing period the market company will perform necessary refurbishment and the machine can be sold as a refurbished machine with the same warranties as a new. At the moment only leasing of new machines is being discussed and it is primarily viewed as a way to increase sales of new machines not refurbished. (NU, 2015)

Two different customers from different market were selected to act as reference points during the pilot performed at the other BU. The two markets, China and Italy, were chosen for different reasons. In Italy the recession has negatively affected the financial situation for many companies, which in combination with an aggressive competitive landscape makes it an interesting market to try to target in new ways. The customer in China entered the pilot since it specifically requested a leasing contract, however the lease is currently an operational lease

and not a finance lease, which will be offered to customers further on. So far the response from the Italian and Chinese market companies has been positive and the sales teams have intercepted interest from customers. (ST, 2015)

Leasing can be favorable for the customer for several different reasons. To begin with, a leasing contract results in a smaller upfront payment making it accessible for less financially strong customers. Secondly, a leased machine does not involve any capital binding and is not posted as a fixed asset on the balance sheet leading to an increased working capital. Therefore, it is more beneficial towards shareholders. For the case company a number of advantages are expected with the introduction of the new business model. The overall aim with the launch of the new business model is to reach customers and gain additional sales. Most importantly is it a channel to target new customer segment, reach less affluent customers and establish new customer relations with segments that normally would not be considered. Furthermore, this is an opportunity to increase sales of lucrative service contracts, which also guarantees a good condition of the machine after the leasing period is over. A leasing setup does involve increased risk for the case company including payment defaults and higher capital binding. Because of this it is only something a financially strong company can offer its customers and therefore something that could set the case company apart from smaller competitors and give the case company a competitive advantage. In addition, it can be seen as an extra tool for the sales teams enabling them to be more responsive to customer requests. (ST, 2015)

DB (2015) has identified a request for leasing from low investment customers all over the world. Customers in Africa, South America and East Europe have all requested this kind of financial model to reduce the upfront investment cash flow. Also on the Indian market the investment cost is generally the crucial determinant. Due to extremely high investment rates Indian customers highly prioritize the investment cost over the variable cost such as cost for energy consumption. Another advantage with leasing is the knowledge the case company gains over where the components are installed, which gives the opportunity to provide customers with service and support generating additional revenues. (DB, 2015)

In general the perception among sales teams is that the customers wish to own their equipment, hence leasing is not a viable option. However, this might be the case for existing

customers and one of the goals with the introduction of a leasing business model is to reach new customers who might prioritize differently. Upfront sales of machines is still the most preferable business model for the case company as it involves minimal risk and leasing will merely be offered as an alternative to extend the case company's offer. In order to reach new customer segments more alternative business models and offers need to be provided the customers, as ST concluded: "One size doesn't fit all." (ST, 2015)

Leasing is viewed as a way to reach new customer segments and could also be a profitable approach for customers experiencing large growth and therefore are uncertain what capacities they will need in the near future. In many emerging markets, companies have an investment horizon of under a year and for this group leasing could be an interesting alternative. Due to the complexity of the Indian market the market has not been evaluated for the pilot project. However, due to fast growth leasing could be of interest for the Indian customers since they might be in need of regular capacity upgrades. Furthermore, companies experiencing fast growth are often in need of large cash flows since they are constantly required to make new investments. (ST, 2015)

## 6.3 Reflection

### 6.3.1 The Case Company and Circular Return Strategies

As can be understood from the internal cases at the case company described in the previous sector, the company is not unfamiliar with the activities in circular return strategies. However, there is no support or incentives, apart from the leasing pilot project, from the BUs to implement circular return strategies and current focus is on sales of new components. At some market companies activities from circular return strategies are or have been used, however, most of these are activities the BUs are uninvolved in. Currently at the case company there seems to be a will to increase sales by targeting new customer segments and therefore circular return strategies could be part of the offer in the future to reach more price-sensitive customers on emerging markets in both Asian and African countries.

The internal cases indicate a demand for alternative business models and an extended offer from various markets. The main reason for customers to demand recovered components and spare parts are usually because they would like to lower the initial investment cost. For some

remanufactured or refurbished equipment, including components, the price can be lowered to around 50-75 % of the price for newly manufactured products making it attractive to new customer segments.

### 6.3.2 Customer Requirements for Recovered Products

From the information presented in the circular return strategy cases, five critical success factors for circular return strategies from a market perspective have been identified. These factors regard the customers' requirements for recovered product and if these requirements are not fulfilled the demand for the recovered products will be moderate. The factors identified are: high availability, suitable product specification, long warranties, high quality and low price.

The importance of a high availability is stressed in the case about *Volvo Exchange Parts*. Martin Twedmark (2015) reveals that the availability is highly prioritized and if necessary newly produced products are sold as remanufactured products in order to meet the demand. The business model for exchange parts is very effective at Volvo Group and guaranteed availability on remanufactured spare parts is a key factor for its success. Moreover, the importance of high availability can be identified in the cases performed within the case company. On the American market the main obstacle hampering the business for refurbished processing equipment is the availability of suitable used machines in the marketplace. Due to difficulties in offering refurbished components corresponding to the customers' requirements the refurbished equipment is rarely promoted to customer and therefore the business model is regarded as insufficient.

The importance of a fitting product specification can be identified in the case for the American market since used components do exist on the market but are too old to meet the customer needs. The possibility to offer recovered products with appropriate product specifications satisfying customers' requests is crucial to obtain demand for the recovered products. That it is significant to offer recovered products with fitting product specification can also be recognized since KK (2015) states that the customers primarily demanding recovered products are customers that order machines that do not need to be customized.

The most important factor identified from the cases is the customers' request for a low price. That a lower price would be an attractive way to reach new customer segments is acknowledged at both the Chinese, American and Indian market company. Depending on the market, the interviewees confirm that a refurbished component often can have a price that is 50-75 % of the price of a new machine but with similar margins. This is aligned with the business case for *Volvo Exchange Parts* that usually sell remanufactured exchange parts to a price on average 30 % lower than the price for newly produced spare parts. Furthermore, the case company on the Chinese market has experienced that an appropriate price is essential for the customers' investment decision. When the case company did not manage to offer competitive prices for their refurbished products on the Chinese market the demand for refurbished components ceased.

Good warranties have been identified as a common customer request in all cases performed. The better the warranties are the easier it is to sell the recovered products. Volvo Group as well as the Chinese market company and the case company's BU in Sweden offer the same warranties on the recovered products as for new products. For some markets this is an important requirement and EL (2015) declares that this is necessary to attract the Chinese customers. On other markets investigated good warranties on recovered components are important but not as crucial.

The critical success factors identified correlate with each other to some degree and for instance will a good warranty most likely improve the perception of high quality. Furthermore, the price is also related to the quality and the warranties. If the recovered products are perceived to be of high quality the customers are willing to pay a higher price. This can be identified from the case about *Volvo Exchange Parts*. Due to comprehensive marketing of the high value and quality of their exchange parts Volvo Group has acquired new customers who previously purchased used spare parts with significantly lower standards than the parts offered by Volvo Group. Volvo Group succeeded to acquire new price-sensitive customers, despite the fact that Volvo Group's remanufactured spare parts are more expensive than the product offered by many local second hand dealers, since the customers realized the higher value and quality of Volvo Group's exchange parts. This example emphasized how

important it is to extensively communicate that the quality of the remanufactured products are as good as new.

Finally, the critical success factors identified from the external and internal cases are all needed to be managed in order to achieve a demand for recovered products and accomplish a successful circular return strategy. However, the factors do correlate and therefore a change in one variable will most likely affect other variables. The five factors are illustrated in figure 17.



Figure 17. The five main customer requirements for recovered products sold on the Indian market.





## 8 Analysis

*The information gathered during the literature review combined with the empirical data is the body of the analysis performed in this sector with the aim to answer the research questions. Firstly, the Indian customers' acceptance of circular return strategies is analyzed for each customer segment. Secondly, the case company's ability to meet the five customer requirements on recovered products is discussed. Lastly, the suitability of product return models for used components for the case company on the Indian market is analyzed.*

### 8.1 The Indian Customers' Acceptance of Circular Return Strategies

In this section the Indian customer segments' attitude towards circular return strategies is analyzed in order to investigate if the concept can generate increased market shares for the case company on the Indian market. As presented in chapter 3.3 *Circular Return Strategies From A Market Perspective* the factors affecting the customer acceptance of circular return strategies are: the view on product ownership, the importance of initial investment costs relatively TCO, the tolerance for periodic payments and the acceptance for recovered products. Hence, these factors are discussed for each customer segment in order to identify where the greatest possibilities and potentials for circular returns strategies are found.

During the interviews performed at the case company a request for new financial models in order to have a wider customer offer has been identified from both customers and from some of the case company's market companies. The main objective with alternative financial models is to reach less financially strong companies to increase the customer base. Smaller customers in emerging markets are unable to pay a high initial investment cash flow and are therefore requesting a business model that lowers the upfront cost and thus reduce the threshold to buy high quality processing equipment. Furthermore, the benefits associated with a broader portfolio have been identified on a managerial level since it would extend the case company's offerings and act as another sales tool. The case company is currently primarily focused on developing the products portfolio in order to meet the market's future demand. In

addition, the use of new business models to develop low-cost solutions is seen as an interesting approach to reach low investment customers.

The implementation of a business model developed from the concept of circular economy is in line with the case company's values since circular economy aim to lower the environmental impact by breaking the linkage between economical growth and the use of resources. The case company's components have sustainable values such as high-energy efficiency. Therefore the use of circular return strategies could be a way for the case company to achieve both financial and environmental benefits on emerging markets while using their existing products.

In order to investigate if circular return strategies can be a way to reach increased the market shares on the Indian market an analysis of the customers' attitude towards circular return strategies has been conducted. The performed research reveals that other companies, such as Volvo Group and Caterpillar, who also provide durable products requiring high upfront investment costs, already use circular return strategies on the Indian market. Volvo Group believes that the use of its circular return strategy *Volvo Exchange Parts* has helped the company to reach new price-sensitive customer segments. Furthermore, Volvo Group's experiences from the Indian market indicate that the customers' perception for remanufactured products is high as long as the high quality of the remanufactured products is successfully communicated to the customers. Most of the companies working with circular return strategies identified in this project operate within the construction and automotive industry. Therefore the customer perception for circular return strategies might be different for the case company's customers who are in the dairy industry. For this reason interviews with employees at the case company's market company in India was conducted to further investigate if circular return strategies could be appealing strategies for the case company's customers.

The attitudes towards circular return strategies vary between the case company's customer segments in India. Dairy cooperatives are the most price-sensitive customer segment and solely consider the upfront investment cost when making an investment. This, in combination with the fact that they rarely consider TCO at all, indicates that leasing of equipment can be an attractive option for this customer segment. However, the dairy cooperatives favor to own their processing equipment and would for that reason not find operational leasing appealing.

Even though finance lease could be a suitable option as the product ownership is transferred from the company to the customer, it is still not believed to be an attractive offer for this customer segment. This is probably due to the structure of the dairy cooperatives and the decisions process since the tender processes used by the dairy cooperatives usually do not allow periodic payments. Furthermore, it is not believed that remanufactured equipment is appealing to this customer segment since they prefer to buy new processing equipment. Because of these customer preferences in the dairy cooperative segment circular return strategies would not at the moment be a way to grow in this segment.

The study indicated that the potential for circular return strategies to succeed is bigger within the private Indian dairies. The private Indian companies segment consists of a large number of different types of customers and they vary in everything from capacity, growth rate and financial position making it difficult to draw a general conclusion for the entire segment. However, it was confirmed during the interviews that several customers in this segment have a greater acceptance for both leasing and remanufactured products and a circular return strategy could therefore be interesting for some customers in this segment.

MNCs do not in general pay much attention to the price; it is rather factors such as machine performance and specifications that are the most crucial during the investment decision. Nonetheless, the initial investment cost for processing equipment is a factor that is valued also by MNC's, as they need to be able to offer competitive prices to their Indian end-consumers. For this reason, new business models such as circular return strategies could be of interest for MNCs operating on the Indian market. However, the data gathered from the interviews suggests that the MNCs prefer new equipment and therefore most of the customers in this customer segment would not want to buy remanufactured equipment. Furthermore, the market company does not believe that leasing of equipment is an appealing business model for MNCs. Nevertheless, although an interest for leasing has not been identified for the MNCs on the Indian market, MNCs in other countries have started to consider leasing as a financing option. During the pilot project of financial leasing an interest from Nestlé was identified. The motives for Nestlé's interest was not related to financial difficulty to pay for the full investment upfront but rather the opportunities it created to have a more favorable balance sheet since it would be a way to increase the working capital. This discovery conforms to

theory that argues that the motivators for leasing vary depending on the company's size. The literature revealed that small companies are attracted to leasing due to the growth opportunities realized while big companies are driven by increased profitability, improved taxation and leverage. The conclusion is however that because of the insights gained from the interviews, MNCs on the Indian market currently wish to buy new equipment and prefer to own their equipment i.e. would not like to lease and therefore it is an unsuitable segment for circular return strategies at the moment.

To conclude, the analysis shows that private Indian dairies are the customer segment most suitable for circular return strategies as they currently have the greatest acceptance for leasing and remanufactured equipment. At the moment, the private Indian dairies consist of many different-sized customers resulting in a market for both CIP and take down components depending on the specific company's capacity need and budget. The interviewees believe that both types of components will continue to be in demand, however, the CIP component would have a greater growth potential if the initial investment cost could be reduced. At the moment the case company has a very strong position on the take down component market and has a clear advantage over its competitors. Due to this the potential for circular return strategies is predicted to be greater for CIP components. From the interviews it is identified that the main reason for the low market coverage in this sector probably is related a high investment cost. Circular return strategies are particularly interesting for private Indian customers requesting medium and high capacities since this segment would be interested in the CIP components. As stated earlier the upfront investment cost can be lowered through both product return models such as leasing and trade-ins as well as through recovery options such as remanufactured and refurbished products.

In the long run MNCs could be interested in circular return strategies, however, they are not expected to have the same impact on the case company's sales as is offered to private Indian customers since the case company already holds a strong position within this segment. Furthermore, a lowered investment cost is not as crucial for this segment as for the private Indian dairies. At the moment the customer segment consisting of dairy cooperatives are deemed to have the least interest and potential to increase through circular return strategies. When all factors are taken into consideration the conclusion is that the impact of circular

returns strategies are found to be greatest for CIP components sold to private Indian customers processing medium to high capacities.

## 8.2 Ability to Meet the Five Customer Requirements on Recovered Products

In the former analysis a potential for circular return strategies has been identified on the Indian market. Furthermore, the analysis shows that a circular return strategy would be particularly attractive for the medium and large private Indian dairies and especially when targeting dairies with CIP components. However, as described in the literature there are many challenges associated with the transformation towards new circular business models and many of these issues are related to the organizational structure.

Two main steps need to be managed in order to achieve a circular return strategy. Firstly, the company needs to obtain a demand for the recovered product i.e. the customers must accept and request recovered products. Secondly, the used products need to be returned to the company. This project primarily studies the suitability for circular return strategies from the market perspective and as identified from the circular return cases there exist a number of requirements that the customers hold on recovered products. In this project five main requirements were identified but other can exist. The five requirements are product specifications, price, quality, warranties and availability, see figure 18. Even though this project has focused on the customer perspective to identify the most appropriate circular return strategy and not the organizational structure of the case company, some insights from the internal cases will be discussed in this sector. Based on identified strengths and weaknesses mentioned during the empirical data collection, the case company's ability to meet the five customer requirements on recovered products will be analyzed.



Figure 18. The five customer requirements for recovered products sold on the Indian market.

The first customer requirement for recovered products, an appropriate product specification, is not predicted to be a major challenge for the case company. This is because the CIP components are perceived to be over-specified by many Indian customers, which indicates that the CIP models will not become obsolete on the Indian market in the near future. Also take down models have previously been subject for recovery and despite its basic functions the demand for take down components are continuously high. Therefore a suitable product specification for the recovered products is seen as a requirement that the case company is in a good position to meet.

Secondly, the internal case studies reveal that when the case company has sold refurbished products to customers and the price is usually 50-75 % of the price for new sales. This indicates that it would be possible for the case company to achieve more competitive prices by recovering their product. In addition, the information extracted from the internal database shows that in the past the case company has sold remanufactured components and achieved a higher average margin than on sales of new components. Both the internal cases and the data

indicate that the case company would be able to meet the customers' requirement for a significant lower price on recovered products and still achieve a satisfying margin. However, thorough analyses have to be conducted by the company in order to estimate the cost for product recovery and the Indian customers willingness to pay for recovered products.

The third critical customer requirement for recovered parts is a high quality. Since manufacturing of components currently take place in India it might be possible to perform remanufacturing of the Indian machines. As defined in the literature, remanufacturing of a product means that the product is recovered on a component level and that all obsolete parts are exchanged. Remanufacturing of a product means that the recovered product holds the same quality as newly produced equipment. It could therefore correspond to the same quality that is expected of the case company's products by the market place. The case studies show that usually when a market company is responsible for the recovery of machines the used recovery option is refurbishment. This is one step less advanced than remanufacturing and when products are refurbished the most important parts are inspected and replaced if it is needed. The refurbished products are then tested to pass the same tests and quality standards as a new product, which does also guarantee a high quality. Which of the two options, refurbishment or remanufacturing, that should be chosen depends on the organizational structure, the plants capabilities for remanufacturing, the prerequisites for the reverse supply chain and the costs associated with the options. Since both recovery options hold a high quality this critical success factor is not expected to hinder the establishment of a circular return strategy. However, it is important that the case company thoroughly communicate the high quality of their recovered products to the Indian customers. Since the case company is perceived as a high quality brand the probability is high that they successfully can communicate the high quality of there recovered product to the customers.

The fourth critical customer requirement for recovered products is a good warranty and the same warranty as for new sales is frequently given on refurbished and remanufactured products. From the interviews with people working at the case company's Indian unit explained that Indian customers in general have a very short investment horizon, which could lower the requirements for a long warranty. Nevertheless, the better the guarantees are, the more it communicates that the products hold the same quality as new equipment. For this

reason long warranties can improve the perception of high quality helping the case company to overcome the critical success factor of a perception of high quality for its recovered products. Giving good warranties on the recovered products is predicted to be a minor problem for the case company since the internal cases reveal that they usually give the same warranties on refurbished and remanufactured products as for new sales.

The last requirement that the case company needs to be able to fulfill in order to obtain demand for the recovered products are a high availability. In comparison to the previous four requirements that are predicted to be relatively easy for the case company to accomplish, the availability of recovered products are recognized as a bigger challenge to overcome. In the case study about recovered products on the American market the availability of used components to recover is identified as the obstacle lowering the sales of recovered products on the American market. The availability problem is a result of the components extensive product lives that lead to a low inflow of used products. Furthermore, many of the used components available on the market are obsolete and do not meet the product specifications requested by customers.

As previously argued, appropriate product specifications are not seen as a problem for the Indian market due to the Indian customers' lower product requirements. But even though the components returned to the company are expected to meet the customers requested product specification the availability is still seen as a major challenge since the rate of returned products are predicted to be rather low. This low return rate is a result of the case company's rather limited market coverage for CIP components in India. The low market coverage means that the amount of used CIP components that could be returned to the company for recovery is low. Import of cores could have been a solution to this problem, but due to high tariffs and difficult rules for import of cores to India it might not be feasible. These obstacles were the cause for Volvo Group to open a remanufacturing plant in India since the existing supply chain could not be used in India. Volvo Group's pre-study before setting up *Volvo Exchange Parts* on the Indian market showed that it is currently not possible to profitably remanufacture outside India and import remanufactured cores and parts. Therefore it can be concluded that the supply of used components must come from within the Indian market for it to be a successful business model. The return of appropriate cores from the Indian market need to be



investigated and managed by the case company in order to be able to supply the demand for recovered products. The availability of a large number of used CIP components is currently identified as an obstacle for the case company to successfully establish circular return strategies on the Indian market. However, since the Indian market is expected to grow rapidly this can lead to that the Indian customer upgrade their components before the end of the components' product life as a result of an increased capacity need. The more frequently the customers upgrade their products the more used products are available on the market resulting in a greater possibility for the case company to obtain a higher availability for recovered components. Nevertheless, the availability problem lasts and should be investigated further by the case company. Table 7 summarizes the case company's ability to meet the requirements for recovered products.

|   | Price   | Quality   | Warranties  | Product Specification  | Availability  |
|---|---|---|---|--|---|
| <b>The case company's experience of recovered products</b>            | <ul style="list-style-type: none"> <li>• Usually 50-75% of price for new sales</li> <li>• Higher margins than for new sales</li> </ul>  | <ul style="list-style-type: none"> <li>• Might be possible to remanufacture in India</li> <li>• Refurbished products pass the same test as new products</li> <li>• Case company perceived as a quality brand</li> </ul> | <ul style="list-style-type: none"> <li>• The same warranties are usually given on both refurbished and remanufactured products</li> </ul> | <ul style="list-style-type: none"> <li>• Since CIP components at the moment are perceived as over specified they are not expected to become obsolete in the near future</li> </ul> | <ul style="list-style-type: none"> <li>• Challenging due to an extensive product life</li> <li>• Limited installed base of CIP components on the Indian market</li> </ul> |
| <b>The case company's likeliness to meet the customer requirement</b> | <ul style="list-style-type: none"> <li>✓ Will not be a problem to lower the price, however it need to be investigated what price the Indian customers are willing to pay</li> </ul> | <ul style="list-style-type: none"> <li>✓ The case company will be able to guarantee a high quality on the components but it is important that they communicate this quality</li> </ul>                                  | <ul style="list-style-type: none"> <li>✓ Will not be problem</li> </ul>   | <ul style="list-style-type: none"> <li>✓ Not predicted to be a problem</li> </ul>  | <ul style="list-style-type: none"> <li>✗ Seen as a challenge for the case company in India</li> </ul>   |

Table 7. Overview of the case company's ability to meet the customer requirements on recovered products.

### 8.3 Ability to Manage the Return of Used Components

In the analysis the case company's ability to meet the five customer requirements on recovered products was analyzed. Availability of components to recover was identified as an obstacle for successful implementation of circular return strategies on the Indian market. This

sector will discuss how the case company can increase the availability of products to recover by implementing suitable product return models. This is also a vital step to complete the loop of the circular return strategies. The advantages and disadvantages of possible product return models for the case company will be analyzed. As concluded earlier not all product return models are feasible for the product characteristics of the component. Due to this return options that will be discussed in this sector are trade-ins, guaranteed repurchase price and leasing.

As stated in the literature review there are benefits associated with the use of trade-ins. Firstly, the product return model of trade-ins is associated with both the business of selling a new product and the advantaged to gain a used product to a low cost. The combined negotiation of the price for both the new and the used product often results in a premium price on new sales in exchange for a little higher trade-in price for the used product, which put together is a favorable deal for the company. Secondly, in the literature it is shown that the threshold for upgrading products is lowered when the customer can trade-in a used product. This is a desirable outcome for the case company, as they can simultaneously increase the number of new sales and the return rate of used components, which is necessary for a successful circular return strategy. Another way to increase the product return rate is to give the customers a guaranteed repurchase price based on the condition of the machine and after a pre-decided timeframe.

One disadvantage is that neither trade-ins nor guaranteed repurchase price significantly lowers the investment costs for the customer's very first investment. However, trade-ins and guaranteed repurchase price can have a positive impact on the customers' investment decision due to the end-of-use benefits associated with these options, such as financial benefits when replacing the product. However, from interviews it is concluded that many Indian customers solely consider the initial cost when making an investment they are not expected to regard these benefits and hence these product return models will not affect first times sale. Nevertheless, both trade-ins and guaranteed repurchase price are great options in order to improve the relationship with existing customers as the case company will be in contact with the customers when they are about to replace their old component. This gives the case company knowledge about when the customers search for new alternative components and

makes it easier for the company's sales managers to work proactively. In addition, to an improved customer relation and more proactive sales managers, trade-ins and guaranteed repurchase price increases the case company's knowledge about where the components are installed on the secondary market. This, in turn, increases the possibilities for the case company to capitalize on the revenues generated from after sales and services also for the recovered components.

An advantage with trade-ins in comparison to guaranteed repurchase price is that the principle for a trade-in is that the customer purchases a new product from the company. For this reason trade-in as a product return model is regarded to be a more efficient option in order to keep existing customers. To conclude, even though trade-ins and guaranteed repurchase price are not seen as tools to increase first time sales by target new customers, both product return models are seen as essential in order to obtain a high rate of return for used components and thus achieve a high availability for recovered products.

Leasing, on the other hand, is a good option when aiming to lower the upfront investment cost and as a low upfront investment cost is a crucial factor for many Indian customers the option of product lease can increase first time sales. The case company does already have high market coverage for take down models, leasing is not seen as essential for this type of component as for the CIP components. The high price has been referred as the biggest obstacle for CIP components on the Indian market and leasing of the product could be a way to increase the installed base. There are many ways to design a leasing offer. The case company can offer leasing through a third party leasing company or perform it in-house. Furthermore, the lease could either be a finance lease or an operating lease. However, business potentials generated by leasing has already gained recognition on a managerial level and a decision regarding the type of leasing offer has already been made. It is decided that the case company should use finance lease with a mandatory service contract.

For the ongoing leasing pilot project currently running at the case company and it is assumed that most of the customer will purchase the leased equipment in the end of the lease term. This assumption is aligned with the statements stated by the European Commission explaining that in finance lease the customer obtains ownership of the product and therefore usually keeps it in the end of the leasing term. In the literature leasing is presented as one way

to secure the return of the products in order to achieve a circular return strategy. However, the leasing pilot at the case company is not identified as a product return model, rather a business model with the aim to reach new, more price-sensitive customer segments. Therefore it can be discussed if this leasing model will contribute to a higher rate of return for used products.

In conclusion, the three product return models presented above are found to be appealing for the case company in order to grow on the Indian market. However, the different models entail different advantages. Leasing is the preferable option if aiming to lower the upfront investment cost for the first time sales. It is not however a sufficient product return model as the customers will probably purchase the component in the end of the lease term. Moreover, neither trade-ins nor guaranteed repurchase price lowers the investment cost for first time sales. However, these product return models lowers the investment cost for the new component when performing a trade-in and also contributes to strengthen the customer relationship. There are many similarities between trade-ins and guaranteed repurchase price, however as trade-ins give the customer more incentives to buy a new component from the case company this product return model is seen as preferable over a guaranteed repurchase price. In order to develop a strategy that both target new more price-sensitive customers and also addresses existing customers, a combination of leasing and trade-ins are preferable. However, to achieve a high rate of product returns the case company might also need to repurchase components.

## 9 Conclusions and Recommendation

*In this sector the analysis is summarized and the findings presented. The analysis discloses that circular return strategies could be an appealing approach for the case company to increase its market shares on the Indian market. Circular return strategies have been identified to be particularly suitable to use in order to grow within the market for CIP components and are recognized to be a way to target medium and high capacity customers in the customer segment consisting of private Indian companies. Based on the result of the analysis a recommendation is given to the case company.*

### 9.1 Conclusion

To implement a successful circular return strategy is complex and includes many different steps. For the case company it is concluded that they already fulfill most of the customer requirements for recovered products, which results in a favorable position to implement circular return strategies. However, the availability of used CIP components to recover is identified as a challenge that needs to be addressed. Finally, the product return models most suitable for the case company to implement on the Indian market are leasing, trade-ins and guaranteed repurchase price. Where leasing and trade-ins are favored options and guaranteed repurchase price should be used if the return of components needs to be increased. Figure 19 demonstrates the circular return strategies suitable for the case company and illustrates how the mentioned product return models are applied. Our analysis concludes that the case company should develop a circular return strategy by using leasing, trade-ins and product recovery.

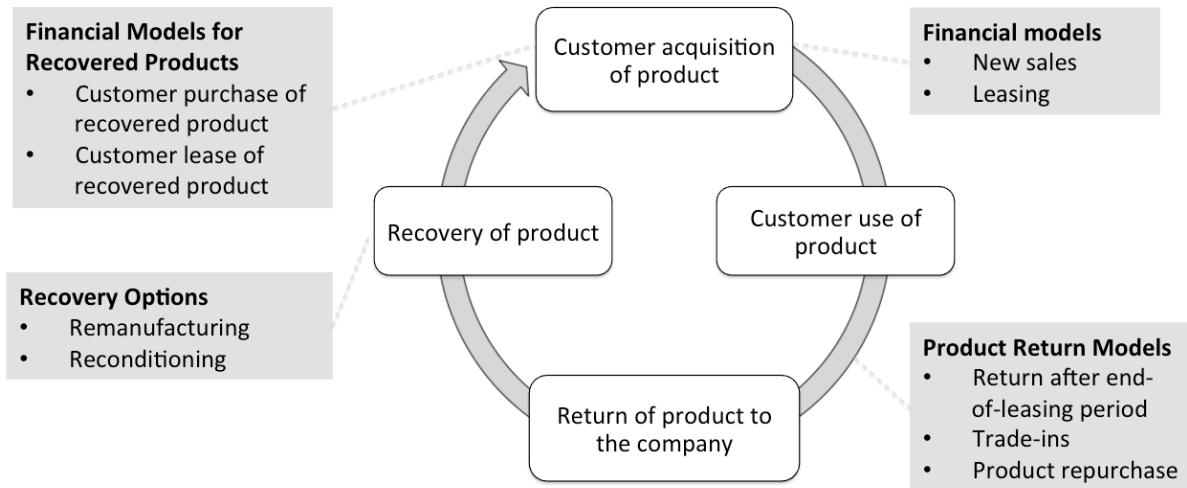


Figure 19. The circular return strategy recommended to the case company.

Firstly, as financial models to sell products the company is recommended to continue with traditional sales but also leasing should be implemented in order to lower the price for first time sales of CIP components, see figure 19. Since leasing can lower the initial investment cost and spread the cost of finance the financial model can help the case company to reach new customers, increase new sales and increase the installed base for components. Furthermore, the leasing offer also gives the customers the flexibility to easier upgrade as their capacities increase. However, at the case company it is predicted that if they lease products the customers will purchase the product in the end of the lease term. For this reason, the leasing models is not seen as a sufficient product return model to reach a satisfying return level of used products. Hence, a model for trade-ins of used products should be developed in order to increase product returns. Thus, the product return models most suitable to develop a circular return strategy are trade-ins, supplemented with leasing and product repurchase, see figure 19. Furthermore, trade-ins usually mean that the customer receives a price reduction on the new sale and therefore trade-ins will generate a return of a used component but also a new sale, starting another loop in the circular return strategy.

The used products that are returned to the case company either through an ended lease, trade-ins or, if needed, product repurchase, are recovered through either remanufacturing or refurbishing in order to be acquired by customers again. The reason for remanufacturing or refurbishing to be the most suitable recovery options are that they best meet the customer

requirements on recovered products. When selling the recovered product, the component is sold for a lower price enabling more price sensitive customers to acquire the product, which will increase the installed base. The used product can be acquired either through product purchase or leasing and the product will then start another loop in the circular return strategy meaning that the case company can capitalize on the revenues generated on the secondary market.

## 9.2 Recommendation

The recommendation can be implemented in a five-step process, which is described in a detailed action plan. A less specified version of the action plan is illustrated in figure 20. The recommendation is to implement circular return strategies on the Indian market since it has been identified as a way to increase the market share. It will help to reach new, more price-sensitive customers, initially in the segment consisting of private Indian dairies.

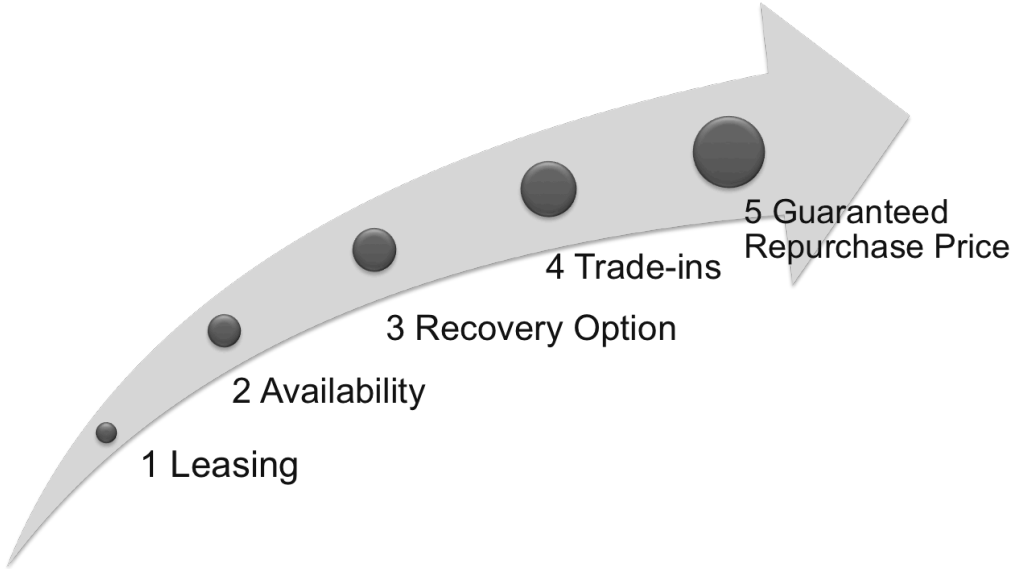


Figure 20. The five steps of the recommended action plan

### 9.2.1 Step One of the Action Plan – Leasing

To begin with, the case company needs to increase the installed base of CIP components on the Indian market to extend the amount of CIP components that can be returned to the company for recovery. In the project, leasing has been identified as an appealing offer for less

affluent customers since it does not require as much capital as a regular investment. This is the first business model that should be implemented by the case company on the Indian market in order to increase the number of first time sales. The offer of financial leasing combined with a mandatory service contract is currently investigated at the case company and a pilot project is under development. India is not under consideration for this pilot project. However, as this study of the Indian market shows that a leasing offer could attract the private Indian customers it is suggested that a pilot project for leasing is performed to target this segment. When the design of the leasing offer is successfully implemented and appealing to private Indian dairies, other Indian customer segments could also be offered the option of finance lease. These customer segment should have the option of leasing as well since it expands the case company's sales offer and can be seen as another sales tool. Even though the leasing offer can be seen as a step towards a circular return strategy, the structure of the financial contract inhibits the leasing offer to be a sufficient product return model and more elements are needed to close the loop.

### 9.2.2 Step Two of the Action Plan - Availability

It is essential that the customers accept recovered products, allowing a new product life for the used product. If the market does not request the recovered products it is not possible to develop a circular return strategy. The analysis shows that private Indian dairies view on recovered products is positive as long as the recovered products fulfill the presented criterions: product specification, price, quality, warranties and availability. As declared in the analysis above, the case company is in a good position to fulfill four out of five of these requirements. The requirement of a high availability of recovered products has been identified as a challenge complicated to manage. For this reason the second step towards the circular return strategy is to investigate the size of the installed base in India in order to identify how many components there exist that can be suitable to recover. A business case estimating how big the supply has to be for the business model to become successful should afterwards be conducted. In these calculations the number of returned components need to be estimated in order to find the number of components needed in order for the recovery business to be profitable.



### 9.2.3 Step Three of the Action Plan – Recovery Option

When the point where the amount of available used CIP components needed for the recovery business to become profitable is reached, a decision regarding the most appropriate recovery option needs to be made. The investigation of the most appropriate recovery option is the third step in the transformation towards the circular return strategy. The two recovery options most suitable for the Indian market company are refurbishment or remanufacturing. These recovery options will enable the case company to fulfill the customers' criteria for long warranties and good quality. In order to evaluate which of the recovery options that should be selected cost analysis as well as analysis of the organizational structure needs to be conducted.

### 9.2.4 Step Four and Five of the Action Plan – Product Return Models

The fourth step in the process is to develop a strategy ensuring that the rate of return of used products will remain above the point where the amount of available used CIP components needed for the recovery business to become profitable. As stated in the literature, leasing could be used as a product return model to increase the return rate. However, this is only appropriate if the customers frequently return the products at the end of the leasing term. Since the case company advocates finance lease over operating lease most customers are expected to purchase the products when the leasing period is over. For this reason the use of leasing as a product return model is insufficient. In addition, many customers will continue to purchase components instead of leasing them. This means that a large amount of used components will not be returned as a result of ended lease terms. Therefore, the leasing offer has to be combined with other return options such as trade-ins and guaranteed repurchase price in order to guarantee a high rate of return.

Trade-ins are favored over guaranteed repurchase price due to the incentives it gives to existing customers to purchase new components from the case company. Implementing a model for trade-ins should therefore be the fourth step in the action plan. If the returned amount of components still does not meet the demand for recovered components a business model for guaranteed repurchase price should be used to further increase the rate of returned components and fulfill the customers demand for a high availability for recovered products. The five steps of the recommended action plan can be viewed in figure 21.

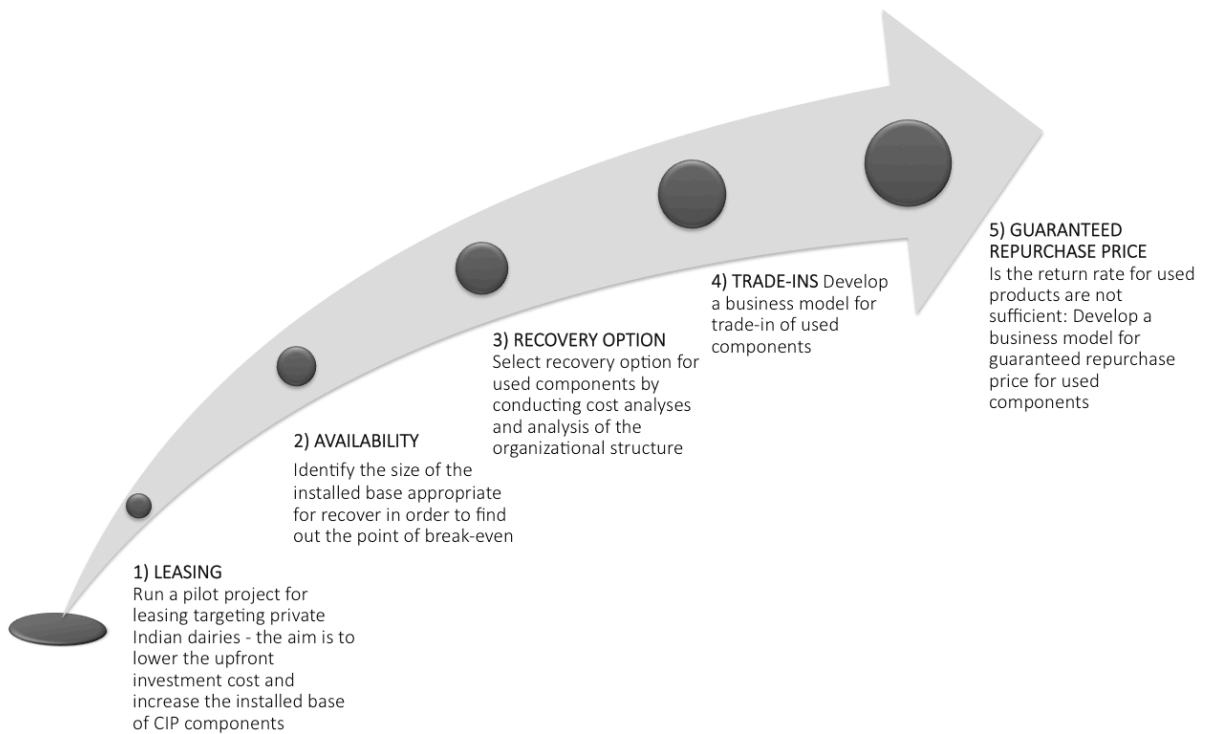


Figure 21. Recommended action plan for how to increase the case company's market share on the Indian market through a circular return strategy.

As identified in the project, leasing and remanufactured products have the highest acceptance among the private Indian dairies. However, there is no information found in the study that indicates that the cooperatives and the MNCs are reluctant to use product return models such as trade-ins and guaranteed repurchase price. For this reasons these product return models should be offered to all customer segments in order to reach a sufficient availability for products to recover. The availability is crucial for the circular return strategy's success and the case company should not actively promote remanufactured components on the Indian market until they can meet the demand for recovered products.

## 10 Summary

*In this final chapter the research questions are answered, which summarizes the project. Furthermore, the results and conclusions are validated through a validity analysis and the contribution to both the academy and the industry is stated. Finally, recommendations for further areas of studies are given.*

### 10.1 Conclusion of the Research Questions

By analyzing data gathered from the literature review, qualitative interviews, sales data and internal databases a new business model within circular economy has been developed – circular return strategies. Circular return strategies can be used to reach price-sensitive customers without compromising the quality and is for this reason viewed as an approach to expand on emerging markets. Part of the result of the project is the answer to the research question posed in chapter 1.2.1 *Research Questions*. Below the answers for each research question are concluded.

**Research question 1:** How can the Indian dairy processing customers be segmented and what values and requirements affect their investment decision?

The market segmentation identified in this project consists of three different groups of customers: dairy cooperatives, private Indian companies and MNCs. This segmentation gives a brief overview of the Indian dairy market and is aligned with how the Indian market company divides their customers and how researchers segment the customer base for processing equipment companies. (DC, 2015) (Mani & Intodia, 2014) An illustration of the customer segments can be seen in figure 22.

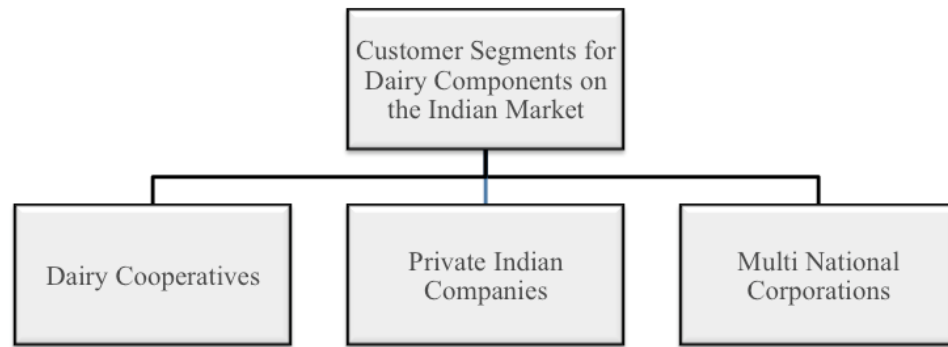


Figure 22. Segmentation of the customers on the Indian dairy market

Each customer segment can be further divided after capacity, which is a factor that often influences the customer preferences. This kind of complementary segmentation is particularly appropriate for the customer segment consisting of private Indian companies as the greatest variation in company size is found in this customer segment. (DC, 2015) However, the chosen market segmentation is considered to be appropriate for this project since it illustrates the most important differences in the customers’ investment decision process.

In the investment decision process four different factors are most commonly considered: price, reliability, machine performance and services. Price is an important factor when making an investment for all customer segments since Indian customers highly consider the upfront investment cost. However, unlike most companies operating on the developed market, the TCO is not regarded at all. This is due to a short investment horizon caused by a rapid market growth and a constant increase for higher capacities. (DC, 2015; LM, 2015; SK, 2015) Even though all customer segments consider price as an important factor the importance varies between the segments. In table 8 the customer values for each segments are concluded in order to answer research question one.

|                            | <b>Dairy Cooperatives</b> | <b>Private Indian Companies</b> | <b>Multi National Corporations</b> |
|----------------------------|---------------------------|---------------------------------|------------------------------------|
| <b>Price</b>               | • Extremely important     | • Very Important                | • Important                        |
| <b>Reliability</b>         | • Important               | • Important                     | • Very Important                   |
| <b>Machine Performance</b> | • Not a large factor      | • Not a large factor            | • Very important                   |
| <b>Services</b>            | • Rarely considered       | • Not a large factor            | • Important                        |

Table 8. The different customer segments' values and requirements when investing in a component

During this project a fourth customer segment was identified, which is currently segmented under the private Indian dairies, see chapter 5.7.1 *Customer Segments*. This customer group consists of SI who buy stand-alone components to integrate in processing solutions sold to dairies. However, this group is not considered to be end customers since the components are later sold to dairies. Neither the literature nor the interviews have defined this group as a fourth market segment, therefore the information about this group's decision process is limited. For this reason and since the group does not consist of end customers, the group has not been further studied in this project. However, it is recommended that the case company consider interacting more with the resellers in order to gain more knowledge about their end customers and to get a better understanding for their customer base.

**Research question 2:** Are circular return strategies acceptable among the case company's customers on the Indian dairy market?

This project concludes that circular return strategies developed by using leasing, trade-ins and product repurchase are accepted by primarily one of the customer segments, the private Indian dairies. Especially the private Indian dairies operating with medium to high capacities are considered to be interested in circular return strategies as a way to lower the initial investment cost for CIP components (SK, 2015). However, interviewees believe that there could be exceptions also within the other two customer segments.

Furthermore, in order to make circular return strategies a feasible way to grow on the Indian market it is essential to obtain demand for recovered products. In chapter 6.3.2, *Customer Requirements for Recovered Products*, five general customer requirements for recovered products has been identified from cases where product recovery has been performed. The studies show that a low price, a high quality, long warranties, suitable product specifications and a high availability of recovered products are required in order to achieve a high demand for recovered products and hence enable a successful circular return strategy.

For this reason the answer on the second research question is that the private Indian dairies are predicted to accept a circular return strategy developed by using leasing, trade-ins, product

repurchase and product recovery as long as the five critical requirements for recovered products are fulfilled.

**Research question 3:** What are the benefits and challenges with circular return strategies for the case company on the Indian market?

One benefit with the developed circular return strategy is the possibility to improve the case company's market position within the business for CIP components on the Indian market. An improved market position can be achieved due to multiple benefits generated by the circular return strategy. Firstly, the upfront investment cost can be lowered for the CIP components, with leasing contracts or sales of recovered components, reducing the threshold to invest in premium components with extensive product specifications, see chapter 6 *Cases and Examples of Circular Return Strategies*. The lowered investment cost will help the case company to reach new customer segments and as a result increase their customer base. Secondly, offering a circular return strategy will extend the case company's sales offer and can be seen as a new sales tool helping the sales team to satisfy both new and existing customers. Thirdly, by using a circular return strategy the case company will have closer contact with the customers when they are about to replace or upgrade their processing equipment. This means that the circular return strategy will increase the interaction with customers leading to an improved customer relationship. Moreover, it would allow a more proactive sales strategy and give the case company improve knowledge about their installed base and the secondary market. The knowledge about the secondary market will, in turn, help the case company guarantee a high quality on the machines operating on the secondary market and also allow the case company to capitalize on the aftermarket sales. Fourthly, the development of a circular return strategy will help the case company to stay in the forefront of the industry. A new business model such as a circular return strategy is hard for competitors to imitate as many lack the financial strength to offer leasing (Thomson, 2015) and since it is difficult to face the customer requirements for recovered products. For this reason the circular return strategy can give the case company a competitive advantage that can sustain over a long time period as the concept can be difficult for competitors to copy. Lastly, the circular return strategy will enable the case company to expand in an environmental conscious way on a price-sensitive market without lowering the product quality. By using a circular return

strategy the case company can reduce their environmental impact and take full responsibility for the total product life of their components.

However, although the benefits generated by circular return strategies are several, there are challenges that need to be conquered in order to develop a successful circular return strategy. The availability of CIP components possible to recover is currently limited on the Indian market due to a limited installed base. In order to successfully implement a circular return strategy as suggested in the recommendation of this report the availability needs to increase, see chapter 7.2 *Ability to Meet the Five Customer Requirements on Recovered Products*. Other challenges could be connected to the physical flow needed for product recovery including the reverse supply chain, necessary plant modifications, inventory levels etc. Furthermore, the organizational mindset could be a problem since these kinds of changes demands managerial support and the employees' willingness to try new ideas and change existing structures (McKinsey & Company, 2012). In addition, there are customer aspects to take into consideration. As an example the price on recovered products needs to be lowered to a level that would make it an attractive option for price-sensitive customers but still be profitable for the case company. Moreover, there exist a risk that the customers interested in leasing contracts are not financially strong enough to be an interesting leasing client for the case company (ST, 2015).

There are many possible benefits with circular return strategies that could help the case company to grow on the Indian market and give them an improved competitive advantage. However, there are also many challenges involved that need to be taken into consideration before implementing a circular return strategy. The benefits and challenges discussed in this section are illustrated in figure 23.

| Benefits and Challenges with Circular Return Strategies   |  |
|---|--|
| <p><b>Benefits</b></p> <ul style="list-style-type: none"> <li>• Lower the upfront cost – reach new customer segments</li> <li>• An additional sales tool</li> <li>• Improved customer relationships</li> <li>• Improved knowledge about the installed base – more proactive sale of service</li> <li>• Hard for competitors to copy due to their smaller size and less financial strength</li> <li>• Hard to copy product recovery process</li> <li>• Lower environmental impact</li> </ul> | <p><b>Challenges</b></p> <ul style="list-style-type: none"> <li>• Availability of product recovery</li> <li>• Implementation of reverse supply chain</li> <li>• Modification of plant needed for recovery of products</li> <li>• Organizational mindset – managerial support and employee willingness</li> <li>• The price on the recovered product</li> <li>• Indian customers not financially strong enough to be offered leasing</li> </ul> |

Figure 23. The benefits and challenges for the case company to implement a circular return strategy on the Indian market.

## 10.2 Validity Analysis

The four commonly established methods to guarantee the quality of a study, mentioned in the methodology chapter of this report, are: constructed validity, internal validity, external validity and reliability. Since internal validity is mainly used for explanatory studies it will not be considered. (Kidder, 1986) To construct validity Yin (2003) suggest that multiple sources of evidence should be used during the data collection and that key informants should review drafts of the case study report. During the project several sources has been used to gain a broad understanding. However, due to the case company’s confidentiality policies data collection has been challenging and a closer contact with the Indian market company, a visit to the market and collaboration with existing and potential customers could have improved the validity of the result. Particularly interviews with the case company’s customers in India would have increased the project’s validity since part of the project’s purpose is to investigate the customers view on circular return strategies. Furthermore, a closer collaboration with a larger amount of interviewees on the Indian market could have resulted in a better and more detailed data collection regarding the Indian market and the Indian market company’s operations. It could also improve the credibility of the analysis. During the working process



key informants has been used to review different drafts of the report. The two supervisors have read selected parts of the report during the project. Furthermore, interviewees, who can be regarded as key informants, have approved their contribution to the project.

To ensure external validity a single case study needs to use theory (Yin, 2003). The business model developed during this project, circular return strategies, is developed from the theory of circular economy. Furthermore, theory regarding product return models and product recovery option has been reviewed in particular. However, circular return strategies from the market perspective are for this project defined as the customers' attitude towards product return models and the use of recovered products. There could be other factors than these two that are crucial from the customers' point of the view and this could affect the validity of the recommendation.

The reliability of a case study is ensured by use of case study protocol and the development of a case study database; hence the data collection process can be repeated. (Kidder, 1986) Since most part of the empirical data in this project is collected through a qualitative general interview guide approach the reliability will be achieved by providing the used interview guides, see Appendix 1. However, the reliability would have been improved if contact details to the interviewees were presented, which was not possible due to confidentiality policies. The reliability is increased by the alignment of the presented theory and the empirical evidence. Furthermore, the main keywords and databases used during the literature review are presented in the methodology chapter in table 2. Another popular way to ensure credibility of data is triangulation of data types and data sources (Knafl, 1989). During the empirical data collection this was taken into consideration and information was always confirmed with at least two independent sources as illustrated in Appendix 2. However, more external cases complementing the case study conducted at Volvo Group would have given a more thorough understanding of how other companies proceed when implementing circular return strategies. Moreover, a larger number of external cases could have resulted in identification of more success factors and challenges related to the customers' acceptance for circular return strategies.

### 10.3 Academic Contribution

Circular economy is a topic of research that has gained extensively recognition lately (Ellen MacArthur Foundation, 2012a). This study contributes to the field of research by illustrating how thoughts from circular economy can be used to enhance the market position of a premium brand on a price-sensitive emerging market without compromising the product quality. In this study the concept of circular return strategies, a strategy where a product's life cycle is extended through product recovery performed by the OEM, has been developed, see chapter 3.1.3 *Circular Return Strategies*. The development of the strategy is based on principles from a circular economy and suitable for durable products.

The result of the project shows that the use of circular return strategies can enable growth of market shares for companies with durable premium products by increasing their presence on the secondary market. The companies can capitalize on aftermarket sales and services and in addition reach new price-sensitive customers. This is a contribution to academia as there is limited research about circular economy as a tool to expand on emerging market.

Another contribution is the presentation of the future market development of the Indian dairy market and its implications for the dairy processing industry. This information is a contribution both to academia and dairy processing equipment companies interested in expansion on the Indian market.

### 10.4 General Contribution

The general applicability of the result can be categorized in two different areas; the Indian dairy market and circular return strategies. The contributions within the Indian dairy market are market segmentation and the segments' various customer requirements and investment decision factors. Furthermore, the presentation of the future market development of the Indian dairy market and its implications for the dairy processing industry can be used by dairy processing equipment companies interested in expansion on the Indian market.

Even though many companies have realized the benefits that can be gained by adapting circular return strategies the dairy processing equipment industry has not yet adopted the

concept. This study shows that thoughts from circular economy can be used for dairy processing companies on the Indian market in order to increase the company's market shares and give them a competitive advantage. *Even though* the Indian market has been subject for this study, circular return strategies are most likely suitable to use on market with similar characteristics. Moreover, the case studies indicate that circular return strategies can be an appropriate approach to reach growth not only on emerging markets but on more mature markets as well. This since a demand for recovered products has been identified also on developed markets.

Furthermore, the five customer requirements identified from the cases concerning product recovery is not solely of interest for the dairy processing industry and can be used as a guideline for many companies considering to establish a business for recovered products.

## 10.5 Recommendation for Further Studies

This project can be regarded as a pre-study investigating the customer view on circular return strategies on the Indian dairy market. The identified requirements and findings are from a customer perspective and before an actual implementation of circular return strategies the company's processes needs to be taken into consideration. Cost analysis, price analysis, organizational setup, supply chain etc. are factors that need to be further investigated for each specific company.

From an academic point of view the concept of circular return strategies could gain more validity and recognition if more research complemented the findings from this project. As an example, data collection with representatives from the three customer segments could be of interest for further studies and provide this project with a better validity. It could also be of interest for the case company to look further into the use of SI and investigate if this customer group should be targeted in a specific way. Moreover, only one industry in one country is taken into consideration; further studies on more markets and companies could help the development of more challenges and benefits associated with circular return strategies. It could also help evaluate if it is a possible approach to reach growth on other emerging markets. In addition, some empirical data discovered during this project indicated that circular return strategies could be an interesting business model to increase market shares on mature

markets as well. Therefore further research on other markets regarding customer attitudes towards circular return strategies could be of interest.

Circular economy is the theory behind circular return strategies that in this project are defined as one loop in a circular economy. An interesting approach for further studies would be to investigate if and how other circular business models could be a way for environmental conscious companies to expand on emerging markets. There are many other areas within circular economy aligned with this project that are interesting topics for further research. To mention a few examples the companies acceptance and willingness to change to circular business models could be further examined and critical success factors for the implementation could be developed. Moreover, how the values of a circular business model and circular return strategies are best communicated to the customers and how the customers' acceptance of recovered products can be increased. These are merely a few ideas about how to further explore the exciting concept of circular economy.

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# Appendix

*In the Appendix the main interview guide will be presented followed by the survey sent to the Indian Sales Management. Lastly, a table illustrating how the data gathering was conducted will be presented.*

## Appendix 1

Several interviews have been conducted to gather empirical data used in the project. The interviews have been both conversational and used a general interview guide approach. The main structure of the interview guide used during the interviews is presented, even though modifications were made depending on the context, the position of the interviewee and in which phase of the project the interview took place. Furthermore, in order to gain understanding about the Indian customers a form was created and the questions were asked during the interviews. It was in particular used during interviews where the interviewees had knowledge about the market company in India and experience of sales and customer contact.

## Main Interview Guide

|                            |  |
|----------------------------|--|
| Date for interview:        |  |
| Issued by:                 | Sophie Bjellerup & Linnéa Kraft  |
| <b>RESPONDENT</b>          |  |
| Company name:              |  |
| Site:                      |  |
| Interviewee:               |  |
| Position:                  |  |
| Contact Detail:            |  |
| <b>GENERAL INFORMATION</b> |  |
| Purpose of interview:      | The aim of the interview is to get a thorough understanding of how the Indian market company operates on the Indian market, the organizational structure and what the Indian customers' demand. The focus of the interview will regard components. |

|                          |  |
|--------------------------|--|
| Confidentiality:         | A summary of the interview will be sent by mail to the respondent and the respondent's approval is required before publishing material from the interview. |
| Format of the interview: | A general interview guide approach   |
| Time frame:              | 1 hour   |

| <b>Main questions</b>   | <b>Additional questions</b>   |
|---|---|
| <ul style="list-style-type: none"> <li>• What position do you hold at the case company?</li> </ul>  | <ul style="list-style-type: none"> <li>• What are your responsibilities?</li> <li>• What kind of projects are you involved in?</li> </ul> |
| <b>The Indian market company</b>  |   |
| <ul style="list-style-type: none"> <li>• What can you tell us about the Indian market company?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• What requirements are most important to the Indian market?</li> </ul>  |   |
| <ul style="list-style-type: none"> <li>• How are government regulations affecting the Indian market company?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• How does the sales work across states?</li> </ul>  |   |
| <b>Dairy in India</b>   |   |
| <ul style="list-style-type: none"> <li>• What can you tell us about the dairy industry in India?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• Who are your main competitors on the Indian Market?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• Future development of the competitive landscape?</li> </ul>  |   |
| <b>Indian customers</b>   |   |
| <ul style="list-style-type: none"> <li>• Who are your main customers?</li> </ul>  |   |
| <ul style="list-style-type: none"> <li>• How do you segment your customer?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• What strategies do you use to reach the different segments? Channels?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• How do you choose what customer segments you should focus on?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• What are the customers demanding?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• How do you acquire customers?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• Is product ownership important for your Indian customers?</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>• What is your customers' perception of using recovered components such as remanufactured products and spare parts?</li> </ul> |   |
| <b>Making business in India</b>   |   |
| <ul style="list-style-type: none"> <li>• How does the case company make business in India? (i.e. channels, across states, CRM, special circumstances)</li> </ul>      |   |
| <b>Business Models in India</b>   |   |
| <ul style="list-style-type: none"> <li>• Do you use leasing or rental on the Indian market?</li> </ul>  |   |
| <ul style="list-style-type: none"> <li>• Do you distribute refurbished products or spare parts?</li> </ul>  |   |

## Survey with Sales Managers at the Indian Market Company

|  |
|--|
| <b>General Information</b>   |
| Please answer the question for each customer segment and send the filled in survey to XXXX   |
| <b>Purpose of the Survey</b>   |
| The aim of the survey is to investigate the customer view on alternative business models such as leasing and refurbishing. Furthermore, try to gather general information regarding different customer segments' values and factors influencing the investment decision. |

### Requirements for Different Customer Segments

| Questions  | Dairy Cooperatives | Private Indian Companies | Multi National Corporations |
|--|--------------------|--------------------------|-----------------------------|
| <ul style="list-style-type: none"> <li>• What requirements and customer values are most important when this segment make an investment decision?</li> </ul>  |                    |                          |                             |
| <ul style="list-style-type: none"> <li>• How would you rank this segment's growth potential from 1 to 5?</li> <li>• (1 = low, 5 = very high)</li> </ul>  |                    |                          |                             |
| <ul style="list-style-type: none"> <li>• Is this growth potential for take down or/and CIP components, why?</li> </ul>   |                    |                          |                             |
| <ul style="list-style-type: none"> <li>• What capacities will be demanded in the future?</li> </ul>  |                    |                          |                             |
| <ul style="list-style-type: none"> <li>• Please rank how willing you believe this customer segment would be to lease components?</li> <li>• (1 = not willing, 5 = very willing)</li> <li>• Why / Why not?</li> </ul>           |                    |                          |                             |
| <ul style="list-style-type: none"> <li>• Please rank how willing you believe this customer segment would be to buy refurbished components?</li> <li>• (1 = not willing, 5 = very willing)</li> <li>• Why / Why not?</li> </ul> |                    |                          |                             |

## Appendix 2

The data collection performed during the project was cross-referenced by using multiple sources to ensure reliability. The table below illustrates how the data regarding different areas was collected.

| Name                     | Format of the Interview                   | Company      | Status    | Indian Market | MC India | Circular Economy | Return Strategy Cases | Case company |
|--------------------------|---|--------------|-----------|---------------|----------|------------------|-----------------------|--------------|
| DC                       | general interview guide approach + survey | Case company | ✓         | X             | X        |                  |                       |              |
| DB                       | informal - conversational                 | Case company | ✓         | X             | X        |                  | X                     |              |
| ST                       | informal - conversational                 | Case company | ✓         |               |          |                  | X                     |              |
| EL                       | general interview guide approach          | Case company | ✓         |               |          |                  | X                     |              |
| LM                       | general interview guide approach          | Case company | ✓         | X             | X        |                  |                       |              |
| Martin Twedmark          | general interview guide approach          | Volvo Group  | ✓         |               |          |                  | X                     |              |
| Christian Johansson      | general interview guide approach          | Volvo Group  | ✓         |               |          |                  | X                     |              |
| RJ                       | general interview guide approach          | Case company | ✓         | X             | X        |                  |                       |              |
| JC                       | general interview guide approach          | Case company | ✓         | X             | X        |                  |                       |              |
| NU                       | informal - conversational                 | Case company | ✓         |               |          |                  | X                     |              |
| AN                       | informal - conversational                 | Case company | ✓         |               |          |                  |                       | X            |
| MJ                       | informal - conversational                 | Case company | ✓         |               |          |                  | X                     | X            |
| JG                       | informal - conversational                 | Case company | ✓         |               |          |                  | X                     | X            |
| JL                       | informal - conversational                 | Case company | ✓         |               |          |                  |                       | X            |
| KK                       | mail                                      | Case company | ✓         |               |          |                  | X                     |              |
| RM                       | informal - conversational                 | Case company | ✓         |               |          |                  | X                     | X            |
| MH                       | informal - conversational                 | Case company | ✓         | X             | X        |                  |                       | X            |
| SK                       | survey                                    | Case company | ✓         | X             | X        |                  |                       |              |
| KS                       | mail                                      | Case company | No answer |               |          |                  |                       | X            |
| AD                       | mail                                      | Case company | No answer |               |          |                  |                       | X            |
| JV                       | mail                                      | Case company | No answer |               |          |                  |                       | X            |
| Volvo Indien             | general interview guide approach          | Volvo Group  | No answer | X             |          |                  | X                     |              |
| Indian Renovation Center | general interview guide approach          | Case company | No answer | X             |          |                  | X                     |              |
| AD                       | -   | Case company | Denied    | X             | X        |                  |                       |              |
| BV                       | -   | Case company | Denied    | X             | X        |                  |                       |              |
| KF                       | informal - conversational                 | Case company | Denied    | X             | X        |                  |                       |              |
| Sales Managers India     | survey                                    | Case company | Denied    | X             | X        |                  |                       |              |
| Academic articles        | data                                      |              |           | X             | X        | X                |                       |              |
| Internal database 1      | data                                      | Case company |           |               |          |                  |                       | X            |
| Internal database 2      | data                                      | Case company |           |               |          |                  |                       |              |
| Euromonitor              | data                                      |              |           | X             |          |                  |                       |              |
| PP - Indian market       | data                                      | Case company |           | X             | X        |                  |                       |              |
| PP - leasing             | data                                      | Case company |           |               |          |                  | X                     |              |