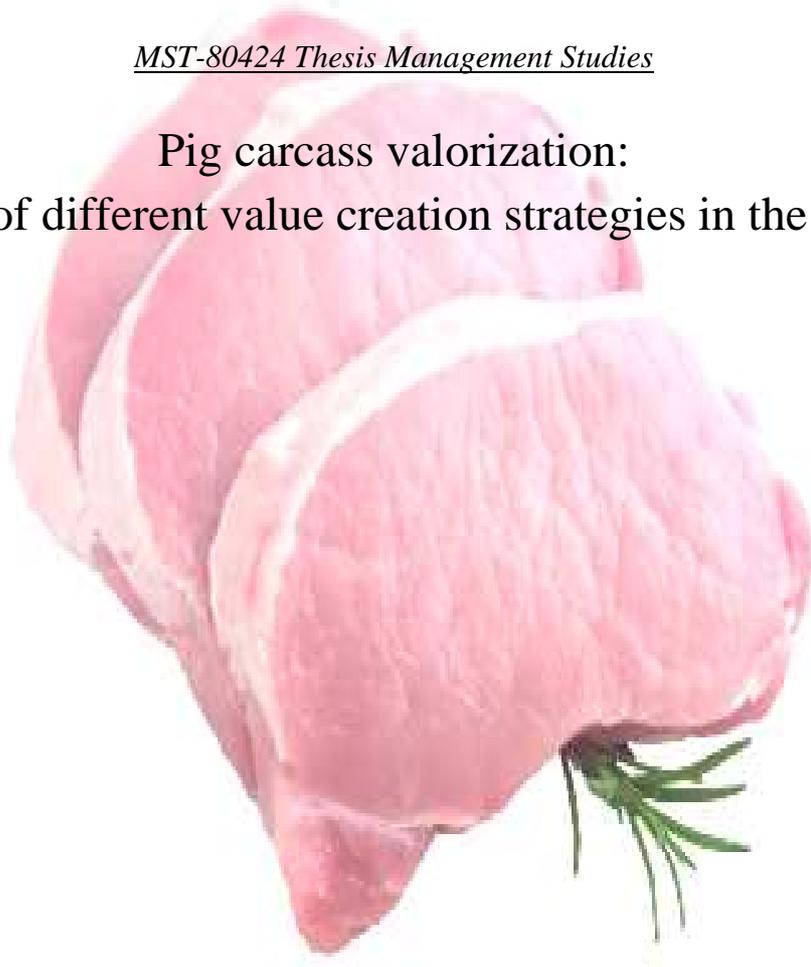


Wageningen University and Research Centre
Department of Social Sciences
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**Pig carcass valorization:
an analysis of different value creation strategies in the pork chain**



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Preface

During my studies, in Italy and in the Netherlands, it became evident to me the impact of managerial decisions on profitability of animal production systems. This was the main reason why I decided to focus on Management Studies at Wageningen University as Minor specialization of my MSc program in Animal Science.

I worked on this thesis during the period April 2009 - July 2010. Its main objective is to identify and evaluate different value creation strategies implemented by companies to valorize all the components of pig carcasses. This paper is then its physical result.

Hereby, I would like to thank my supervisor Dr. P.M. (Nel) Wognum for her cooperation and critical feedback during the entire period of the project. Moreover, I am grateful to Ir. Robert Hoste and Ir. Mark Wever, whom contribution has been critical during the start up of the project. I really enjoyed participating in this project and I hope I can work further on this topic.

In addition, I would like also to thank all the persons inside and outside this project who made possible to reach my goal. I am sure it would require too much time and space to list them all. However, I would like to mention in particular my family, who always supported me, and my friends, whom physical and psychological help has always been precious.

I hope you enjoy reading this thesis,
Alessandro Bisesti

Abstract

Pork is the most consumed type of meat all over the world. The term *pork* is very general and it comprises a numerous set of products. Indeed, from the same pig carcass many different meat parts and cuts can be obtained. Although pork chain's design is largely identical in industrialized countries, value creation strategies for pork may vary considerably. Slaughterhouses and processors are the main shapers of the value creation strategy of the chain. Then, the objective of this research is to obtain insights into the effect of different value creation strategies for pork on pigs' carcass valorization by making a comparison between 1-3 cases. The research strategy of this study is a combination of Desk Research and Case Studies Research. The design of the Case Studies gets inspiration from the Multiple Case Studies Design described by Yin (2003). Two cases have been analyzed and semi-structured interviews were used as method of disclosure. Two diverse value creation strategies were identified and evaluated in this study: Differentiation and Focus Differentiation. Firms pursuing these strategies outrival competitors by differentiating their products from conventional ones. In this way, high levels of image, reputation and customer intimacy can be achieved. However, they fail at valorizing all the pigs' carcass components and some of them are sold as conventional products. Moreover, the Focus Differentiation strategy lacks flexibility, innovation and overall chain alignment. Then, it is recommendable for this strategy to broaden the products focus in order to overcome partially these challenges.

Keywords: value creation strategy, pork chain, pig carcass valorization, operations management, marketing management, differentiation strategy.

Executive summary

Due to the main societal trend of last decades (globalization, increasing population etc.), pork is nowadays in the “global market”. Pork is the most consumed type of meat all over the world. The term *pork* is very general and it comprises a numerous set of products. From the same pig carcass many different meat parts and cuts can be obtained. These parts then follow different production lines and can be sold or further processed to other meat products. Indeed, their destiny in the market is independent from each other. Then, it appears evident that each part of the pig can be regarded as “value” and consequently the problem arises how to generate the most value out of an animal carcass.

Although the pork chain’s design is largely identical in industrialized countries, the value creation strategy for pork may vary consistently among chains. The main actors which shape and implement the value creation strategy are slaughterhouses and processors as a consequence of market demands and fluctuations.

The objective of this research is therefore to obtain insights into the effect of different value creation strategies for pork on pigs’ carcass valorization by making a comparison between 1-3 cases.

Chapter 2 consists of the literature study. In this chapter, concepts from value creation, marketing management, operations management and supply chain management theory have been studied. Value creation derives by the competitive advantage which a certain company has. Then, four particular strategies have been identified: cost efficiency, cost efficiency focus, differentiation and focus differentiation. Marketing is also a key issue for the carcass valorization process. Consequently, the concepts of market selection and targeting have been detailed. Operations management translates into practice competitive and marketing strategies. Firms can stress 4 operations priorities: cost, time, quality and flexibility. Other important concepts which were studied to have a complete theoretical framework are: the pork chain design and the slaughtering process of a pig.

Chapter 3 describes the methodology used for this research project. The research strategy is a combination of Desk Research and Case Studies Research. The former has been used especially in the first part of the project whereas the latter has been implemented to gather relevant data for getting insights into the carcass valorization process from companies facing this problem.

The design of the Case Studies gets inspiration from the Multiple Case Studies design described by Yin (2003). Two cases have been chosen, namely De Groene Weg and Il Consorzio Del Prosciutto Di Parma. Since this research can be classified as qualitative, experts from these companies have been interviewed to collect the intended data. Interviews were semi-structured in order to get deep and thorough insights on specific aspects of the carcass valorization process.

In chapter 4 the analyzed cases are presented. DGW pursues a differentiation strategy. Consorzio instead seeks a focus differentiation strategy since the focus of the companies is only on one end product, the Parma ham. The sources of DGW’s competitive advantage are the uniqueness of the product and reliability. DGW targets niche markets through a selective specialization approach and quality and flexibility are its most relevant operations priorities. DGW coordinates and regulates the Dutch organic pork chain. This organization degree enlarges DGW’s flexibility and product quality at a chain level. The Consorzio del Prosciutto di Parma targets market through a product specialization approach. Its main competitive priority is quality. Then, high levels of reputation and customer intimacy are achieved in the markets. However, the business appears rigid and inflexible.

The chain has no central coordination organ and the organizational structure is standardized. Then, revenues are not shared among other actors in the chain.

In chapter 5 the results are further analyzed. The main challenge of differentiation strategies is the valorization of all the carcass components, especially non edible plucks and heads, paws and bones. To this regard, quantity level is a key issue. Usually, niche markets are targeted and therefore production levels are not elevated. However, when a certain output threshold is achieved new markets for these products can be developed. The Focus Differentiation strategy affects the flexibility of the companies and of the chain. Moreover companies are too dependent on the sales of only one product and therefore they are extremely vulnerable. Opportunities for companies implementing the focus differentiation strategy rely in broadening the product offering, thereby spreading the risks among more products and markets and increasing their flexibility.

In conclusion, this research has led to the identification and evaluation of two value creation strategies pursued in pork chains, Differentiation and Focus Differentiation. These strategies are very effective in marketing and high levels of image, reputation and customer intimacy are achieved. However, both approaches fail to fully valorize all carcass components according to the overall strategy. Moreover, in the Focus Differentiation strategy challenges regarding flexibility and chain alignment arise. These bottlenecks need to be overcome to improve the valorization of the pig carcass. From the present study it appears recommendable for companies active in pork chain to focus on the convenience segment which seems to be increasing and on Asian markets. Suggestions for further research include the study of more cases to improve the evaluation of value creation strategies in the pork chain and doing marketing research on the new identified markets.

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1. Introduction

This research project is valid for the Minor Thesis (24 ECTS) in Management Studies of the Msc student Alessandro Bisesti. The subject of this thesis was developed together by the author in agreement with his supervisors and entails the evaluation of ongoing carcass valorization processes implemented by slaughterhouses and/or processing companies active in different pork chains. Since this assignment was not commissioned by any firm, the content of this report may be considered open and no confidentiality issues are raised. This research has taken place during the period April – July 2010.

This chapter consists of several sections. In the first one, the background and the project context will be outlined. Then, the research objective will be defined. Thereafter, the research framework and research issue for this project will be described. In section 1.5 particular attention will be paid to the description of relevant concepts for this project. Finally, the planning of the research and the report will be outlined.

1.1 Background and Project context

Pork chains are complex supply chains of different parties from farm to fork (Wognum et al., 2008). Although some aspects can vary and despite geographical differences, most pork chains among various countries and regions look similar to each other (Figure 1.1).

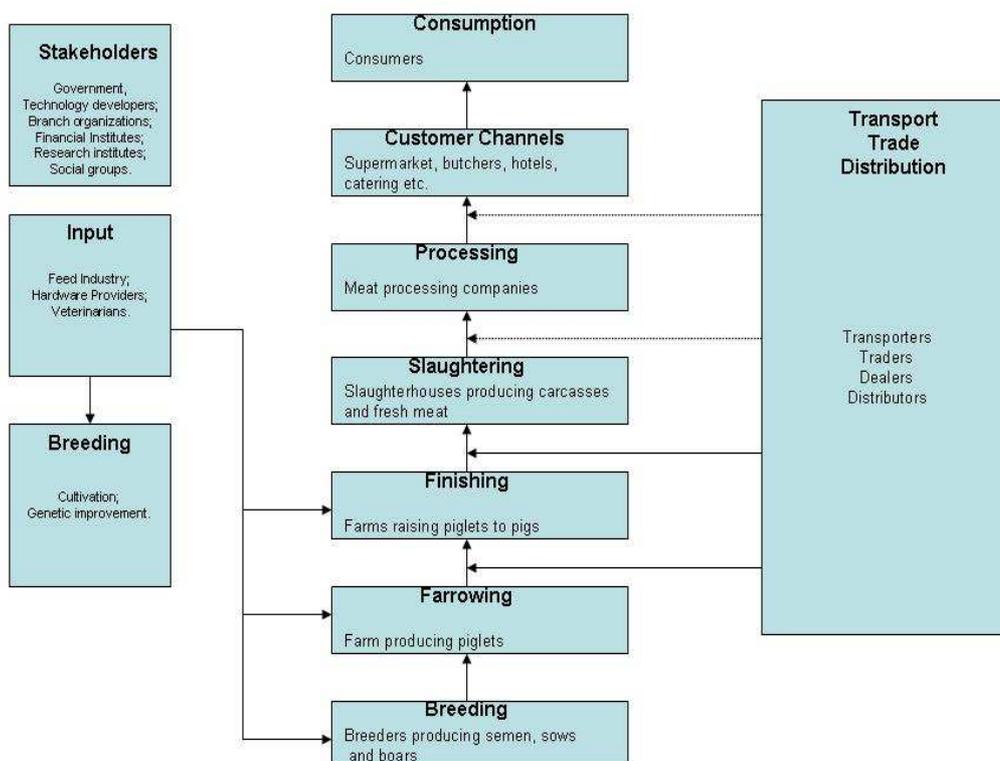


Figure 1.1 Typical pork chain (Wognum et al., 2008)

In the left part of the figure the main inputs to the chains and stakeholders are depicted. In the middle the pork production process is described. The first stages, from breeding to finishing, are also called under the name of primary production process. Thereafter, the pig is slaughtered and processed by specialized companies and finally the meat cuts and the meat products arrive on the table of end consumer through one of the many channels (retailers, butchers, catering etc.).

Due to the main societal trend of last decades (globalization, increasing population etc.) also pork is nowadays in the “global market”. Pork is the most consumed type of meat all over the world (FAO, 2009). According to FAO (2009), in 2005 the world pro-capita pig meat consumption per year amounted to 15.2 kg, whereas its other main substitutes, beef and poultry meat, added up to 12.5kg and 9.5 kg respectively. Western Europeans are large consumers of pork and the highest figure is reached in Austria where a consumption of 71 kg/capita/year has been estimated (FAO, 2009). Germans and Danish are also large pork consumers (about 50-55 kg/capita/year). Dutch people rank in the middle of this scale eating about 35 kg/capita/year in line with Belgian, French and Italians. However, considering the population sizes, in absolute values the main market for pork is China, where every year 49 millions tonnes of pig meat are consumed.

Gira Meat Club (2010) quantified the total world production of pork during 2009 in about 95 millions tonnes/ year. Europe accounts for about one fifth of this amount adding up to 22 million tonnes. The “Old World” is a key player in exporting pork and the main importing countries are Japan, Russia, Usa. Despite China produces about 50% of the global pork production, this country is also a relevant importer for this meat and its products. This is mainly due to its immense population with pork being a rapidly increasing market.

The term *pork* is very general and it comprises a numerous set of products. From the same pig carcass many different meat parts and cuts can be obtained. The main cuts resulting from a pig carcass are the following: hams, neck, shoulder, and “middle”, which can be additionally divided in loin and belly. These parts then follow different production lines and they can be sold or further processed. Their destiny in the market is independent from each other. For example, a Dutch slaughterhouse can export the hams to Italy and Spain, while the neck of the same carcass can go to Greece and the shoulders to Germany. The entire set of end meat-products is consequently very variable and it depends among many aspects such as pig race, farming strategy, geographical areas etc. However, the main driver for the slaughtering and the processing activities is to fulfil market demands.

Considering the global market mentioned above, nowadays slaughterhouses and processors have to deal with demands coming from all over the planet and consequently they have to accomplish very variable customers’ preferences. The Asian markets (China, Japan, Korea etc.) for example appreciate a more marbled and fat meat than Europeans and they consume parts of the carcass (i.e. ears and paws) which are not eaten in Europe; Irish, Polish and Australian consumers prefer rather a lighter meat when compared to the rest of the markets (Ngapo et al., 2007). Moreover, in industrialized countries some trends like increasing demand for convenience food, smaller portions and more products’ variety are arising in the food market. According to PVE and VV (2004) these trends can be summarized in the following four key words: healthy, tasty, convenient and cheap. Pork is also no exception and pork industry has to take these trends into account.

On the other hand the carcass of an animal is not only constituted by meat parts. Hoste et al. (2004) indicated that from a pig having a live weight of 115 kg only 70kg of meat cuts are obtained whereas, excluding drip losses, about 40 kilos of by products (i.e. heads, paws, organs etc.) are generated. The latter should not be considered as waste but as extra valuable components of the carcass and therefore can be sold generating additional value. In line with meat products, these parts of the animal can be exported to other countries where they can be used for human consumption and can be even considered as delicatessen. In addition, their further processing can produce raw materials which are key inputs for other industries. For example, the gut content is utilized for fossil fuel production, blood and organs for the feed industry and gelatine for the sweets, paper, films and pharmaceutical industry (VION Food Group, 2010).

It appears then evident that each part of the pig can be regarded as a “value” and consequently for the actors in the pork chain the problem arises how to generate the most value out of an animal carcass.

Although the pork chain’s design is identical for a large part in industrialized countries, the value creation strategy for pork may vary consistently among chains. Indeed, there are chains more focused on producing an high quality meat, others which link the products to a certain geographical area or also chains focusing on fulfilling the demand of one ore two major markets. In particular, the main actors which shape and implement the value creation strategy of the chain are slaughterhouses and processors (Hoste, 2010, personal communication) as a consequence of market demands and fluctuations. Nowadays these players are getting closer and closer to each other and they can be possibly regarded as a unique stage in the chain. They are key players because on one hand they have to face global, fragmented and differentiated demand from their customers and at the same time they have to find appropriate supply to fulfil it satisfactorily. Consequently, their choice on the value creation strategy is crucial for the valorization of the carcass.

1.2 Research Objective

A research objective concerns the issue to which the project gives a relevant contribution. In practice-oriented studies, its main target is to place the research in time and aspect in the broader project context. In order to be effective, the research objective has to be useful, clear, informative and has to be realized within the time schedule (Verschuren and Doorewaard, 2005).

Therefore, in order to have a better and clearer understanding of how value creation strategies influence the valorisation of the pig carcass among chains and to evaluate the main advantages and drawbacks of this relationship, for this project the following research objective can be identified:

“The objective of this research project is to obtain insights into the effect different value creation strategies for pork on pigs’ carcass valorisation by making a comparison between 1-3 cases”

Considering the highly practical embeddedness of this problem a case study research will be carried out (Yin, 2003). In his papers, Yin (2003) defines three types of case study according to their final objective: descriptive, explanatory and exploratory. Since so far the carcass valorisation issue has not been explored yet by research, the purpose of this project is to gain insight in how firms deal

with it in the practice. Consequently, when referred to Yin's (2003) classification, this research can be included in the exploratory type of case studies.

The research strategy which will be undertaken in this project will be further detailed in the technical research design of the research proposal and in particular in paragraph 1.6.2.

1.3 Research Framework

In attaining the research objective several steps have to be taken. An overview of these steps is presented in the research framework, (see figure 1.2). The steps are divided into three parts, from A to C.

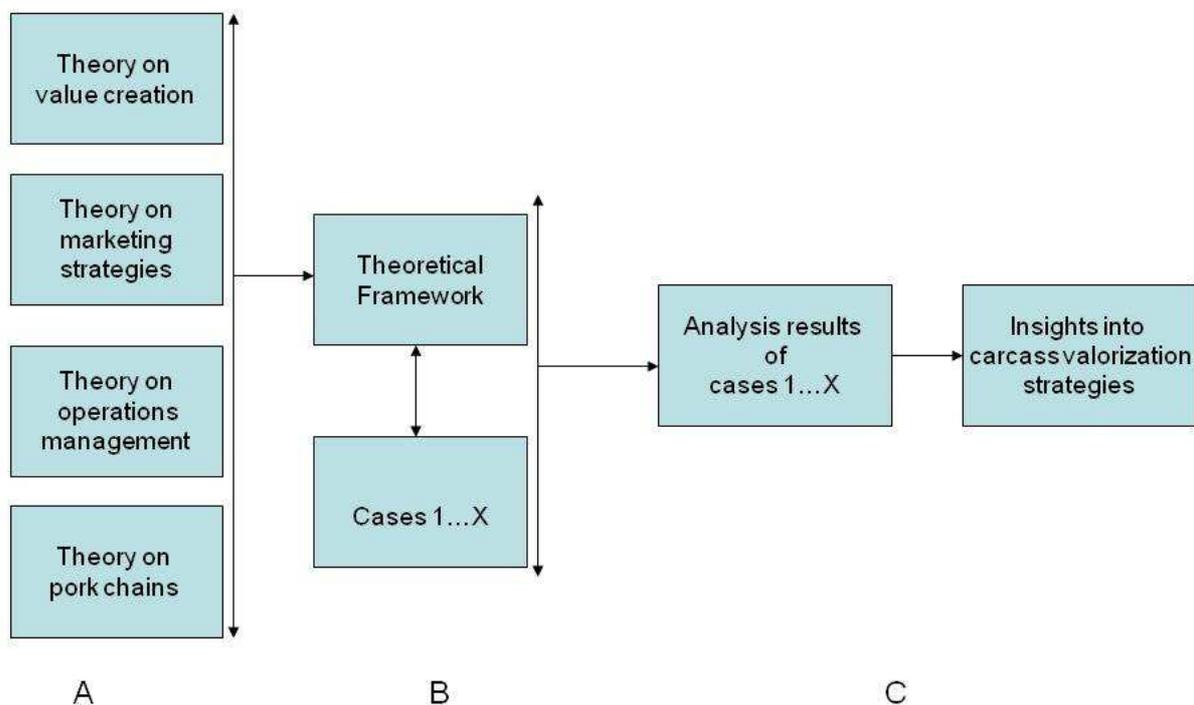


Figure 1.2. Research Framework

Part A is the starting point for the research project. At this stage the most relevant and useful theories for the project are presented. Theory on value creation is important in order to understand from current literature which strategies can be implemented in practice to create value. Marketing strategies' theories will be studied to have a better understanding of the various possibilities that firms have to market their products. Operations management theory will give insights on how companies manage processes. Pork chain will be studied to clarify their setup and to understand their organization. Finally, also knowledge from a field expert will be utilized during the entire duration of the research. Ing. R. Hoste is employed at the Animal Systems Division at LEI Research Institute at Wageningen University; he is a specialist in pig production economy and he performed previous research on the topic of pork production and carcass valorization. Therefore, his knowledge and experience in the field will constitute a relevant input to the project and will help during the analysis of concepts and cases.

The study of the “ingredients” of the research during Part A will lead to next stage. Part B concerns in particular the setting up of the theoretical framework, in which the most relevant elements of the above mentioned theories will be assembled. This will lead also to the choice and the development of an appropriate methodological framework which best suits this research and its objective. Theoretical and methodological framework together will provide the tools through which to analyze and evaluate the cases.

In Part C the outcome of the research project will be generated: in particular the carcass valorization strategies of different cases will have been analyzed. From this, the main conclusions will be derived and consequently the research objective will be achieved.

1.4 Research Issue

In order to elaborate a well founded objective, it has to be clear what knowledge is useful for achieving the objective. The main requirements which must be met in a research issue are efficiency and a steering function of the questions.

In this section of the research proposal a research issue consisting of one main research question (RQ) and several sub questions will be outlined.

The central research question is:

Which value creation strategies are pursued in pork chain to valorize pigs' carcasses and what are their main advantages and challenges?

For answering the general research question the following specific research questions based on the research framework have been formulated:

Part A

RQ 1: What relevant information can be extracted from the scientific literature and field experts on competitive advantage theory, value creation theory, marketing strategy theory to enable the analysis of the carcass valorization process?

Part B

RQ 2: Which is the most suitable theoretical framework for this research?

RQ 3: What methodologies for empirical research suit the theoretical framework to answer the central research question?

RQ 4: How do slaughterhouses and processing companies active in the pork industry deal with the pig carcass valorization strategy?

Part C

RQ 5: Which value creation strategies are implemented in practice among value chains in EU context?

RQ 6: What are the advantages of a certain value creation strategy on pig carcass valorization?

RQ 7: What are the bottlenecks of a certain value creation strategy on pig carcass valorization?

1.5 Definitions of concepts

For the purpose of this project, there are some concepts which need to be defined. The goal of these definitions is to ensure a clear understanding of the research and its outcomes to every reader.

Competitive advantage: Condition which enables a company to operate in a more efficient or otherwise higher-quality manner than the companies it competes with, and which results in benefits for the company (QuickMBA, 2010).

Marketing strategy: a marketing strategy is a process or model to allow a company or organization to focus limited resources on the best opportunities to increase sales and thereby achieve a sustainable competitive advantage. (Easy-marketing-strategies.com, 2010)

Pig Carcass: the dead body of a pig which has been slaughtered for food consumption, with the head, limbs, and entrails removed.

Supply chain: Entire network of entities, directly or indirectly interlinked and interdependent in serving the same consumer or customer. It comprises of vendors that supply raw materials, producers who convert the material into products, warehouses that store, distribution centers that deliver to the retailers, and retailers who bring the product to the ultimate user. (Business Dictionary, 2010)

Value: extent to which a good or service is perceived by its customer to meet his or her needs or wants. It commonly depends more on the customer's perception of the worth of the product than on its intrinsic value (Business Dictionary, 2010).

Value chain: the sequential set of primary and support activities within and around an organization which together create a product or a service (Johnson et al., 2006).

Value creation strategy: the value creation strategy is concerned with the strategy implemented by a firm to create value from a specific product.

1.6 Technical Design

1.6.1 Research material

In order to complete the research, several research materials will be used. A large part of the research will be conducted on the basis of published material like books, scientific literature and articles. Furthermore, the empirical research consists mainly of 3 interviews with experts of slaughterhouses and processing companies active in the pork market. Another relevant input to the research is provided by a field expert, Ir. Robert Hoste. With his experience and knowledge of the field, a better understanding of the general context will be acquired.

1.6.2 Research strategy

According to Verschuren and Doorewaard, by research strategy is meant “the coherent body of decisions about the way researchers are going to carry out the research project”. In particular this refers to the way material is gathered and then processed in order to answer the research questions. In this context, several major strategies can be taken and each one with peculiar features; hence the decision of the most suitable one depends on the approach of the researchers (Verschuren and Doorewaard, 2005).

In the first part of the research the ‘Desk Research Strategy’ will be used. This strategy is characterized by the use of existing material, literature and secondary data, which will provide a broad knowledge about background information, the problem and similar situations. Moreover, on the basis of the literature study a theoretical framework will be set up to steer the empirical research. By using different sources of information like qualitative interviews, literature, experts, media and the team composition of the researcher and supervisors, the concept of triangulation of methods will be used (Verschuren and Doorewaard, 2005).

To gain a deep and thorough view of the object of the research, the ‘Case studies Strategy’ will be utilized after the Desk Research Strategy. This approach focuses on one or few research units and therefore a qualitative research method must be used. Moreover, this method ensures more depth on the specific subject. The empirical research will consist of 1-3 different cases, in order to give an holistic view of the situation. This design has been defined by Yin (2003) as holistic multiple-case studies design. Cases with different value creation strategies for pork will be selected and this screening will lead to a set of theoretical replications with contrasting results. Based on the cases and the theoretical framework an evaluation of various value creation strategies and their relationship with the carcass valorization process will be formulated.

1.6.3 Research planning

“Planning a research project is understood to mean an overview of the activities to be carried out, of the intermediate products and end products produced by these activities, and of the order and periods in which the activities are to be carried out” (Verschuren and Doorewaard, 2005).

The project will cover the time period from 5th of April 2010 till the 26st of July 2010 adding up to 16 weeks. The research planning for this project is built around four phases. First of all, a research proposal will describe the general structure of the research. After feedback and iteration the second stage will begin. The second phase includes the literature study: theories about value creation strategies, marketing and operations management will be acquired to get a deeper insight of the case, namely the evaluation of ongoing carcass valorisation strategies. The literature study also provides the theoretical framework, which is necessary for this project. The third phase consists of the empirical research, in which the case studies will be analyzed and evaluated. Hence, data will be gathered and processed in order to yield relevant conclusions. The last phase will be the finishing touch. In this phase a draft report will be written and after feedback and iteration, the final report of the case study will be produced. Every phase will include a moment of feedback and iteration. A figure representing the research activity plan is shown below.

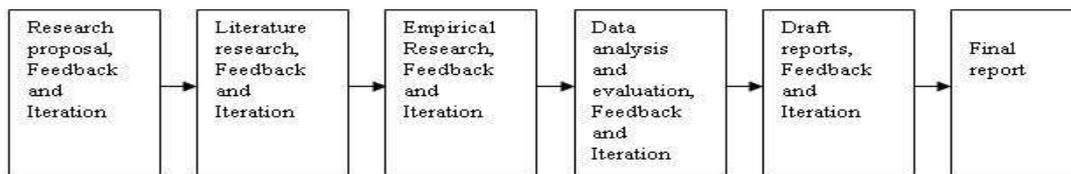


Figure 1.3. Research activity plan

1.7 Structure of the report

In this paragraph the structure of the report is detailed. Chapter 2 will describe relevant literature which will be relevant in the understanding and analysis of the ongoing carcass valorization processes. The described theories and concepts will be brought together and then a theoretical framework for this project will be derived. Chapter 3 explains and further details the research methods which are used to analyze the data. The outcome of the empirical research will be described in chapter 4. In Chapter 5 these outcome will be further analyzed. Finally in chapter 6, the main findings and conclusions will be described. Table 1 gives an overview of the different chapters and the different research questions to be answered.

Table 1. 1 Research questions linked to the structure of the report

Report structure	Research questions
Chapter 1: <i>Introduction</i>	
Chapter 2: <i>Literature study</i>	Research question 1, 2 will be answered
Chapter 3: <i>Methodology</i>	Research question 3 will be answered
Chapter 4: <i>Cases</i>	Research question 4 will be answered
Chapter 5: <i>Results analysis</i>	Research question 5,6,7 will be answered
Chapter 6: <i>Conclusions</i>	The main research question will be answered in order to fulfill the objective of the research

2. Literature Study

This chapter deals with the description of relevant literature for fully understanding the carcass valorization process and its main bottlenecks. The aim of this chapter is to answer the first specific research question:

RQ 1: What relevant information can be extracted from scientific literature and field experts on competitive advantage theory, value creation theory, marketing strategy theory to enable the analysis of the carcass valorization process?

Consequently, the chapter is divided in value creation theory, marketing theory and the last part is about operations management theory.

In section 2.5 a theoretical framework will be generated from the relevant theories and concepts described. This framework is the key to gather and analyze the data yielded during the case studies which will be detailed later in this report. This model will provide the answer to the second research question which is:

RQ 2: Which is the most suitable theoretical framework for this research?

Finally, the last paragraph will summarize the most relevant points and concepts mentioned in this chapter.

2.1 Value Creation theory

2.1.1 *Competitive Advantage and Value Creation Strategies*

The aim of strategic management is to achieve and sustain competitive advantage (CA) (Teece et al., 1997). The latter is essential for the sustainability and profitability of every company active in any market and can be defined as follows: a competitive advantage is a *condition which enables a company to operate in a more efficient or otherwise higher-quality manner than the companies it competes with, and which results in benefits for the company* (QuickMBA, 2010).

As strategic management expert Kay (1993) says: competitive advantage can come from size, or possession of assets, etc....The pattern is increasingly favoring those organizations which can mobilize knowledge and technological skills and experience to create novelty in their offerings (products/service) and the ways in which they create and deliver those offerings.

A sustainable CA is the prolonged benefit of implementing some unique value-creating strategy based on a unique combination of internal organizational resources and capabilities that cannot be replicated by competitors. It is an advantage that enables business to survive against its competition over a long period of time

As can be derived from the previous quotes and from the model depicted in figure 2.1, the concept of CA is at the basis of the value creation concept: only a company possessing a certain competitive

advantage is able to create and deliver a product (or service) which is regarded as valuable by customers.

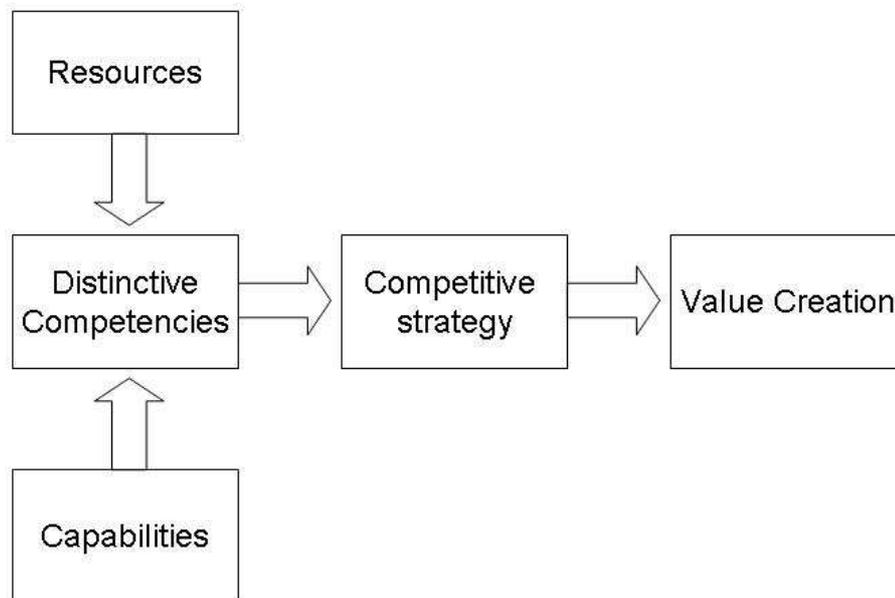


Figure 2.1 A model of Competitive Advantage and Value Creation (QuickMba, 2010; adapted from Porter, 1985)

CA derives from capabilities and resources. The latter is divided in tangible and intangible and they can be defined as the physical or non-physical assets of an organization.

Resources can be grouped in 4 categories: physical (machines, buildings, etc.), financial (capital, cash, etc.), human (skills, employees, etc.) and intellectual (patents, brand, reputation, etc.) resources. On the other hand, capabilities refer to the ability of the firm to exploit its resources effectively (Johnson et al., 2008).

Moreover, resources and capabilities can be also categorized in: threshold and unique (or core). Threshold resource and capabilities are those *needed for an organization to meet the necessary requirements to compete in a given market* (Johnson et al., 2008). Consequently, at threshold levels they do not create any distinctive competencies but they only allow a company to reach a minimum level of performance. In contrast, unique resource and capabilities are those ones which underpin competitive advantage and are difficult to imitate by competitors; hence, they are the core from which a company distinguishes itself and performs better than competitors leading to a competitive advantage and in turn to a competitive strategy in the market (Johnson et al., 2008).

As mentioned before, competitive advantage derives from unique resources and capabilities and it leads to the setting up of a company's competitive strategy. According to Porter (1985) there are two main types of CA: cost leadership and differentiation. The strategy which a company implements to develop and sustain its competitive position in the market on the basis of its own CA is called a competitive strategy. In turn, CA is also the main determinant of the value which is created by the company. Therefore, competitive strategies are also the strategies used to create and deliver value in to the markets and so they can be also defined as value creation strategies.

Porter (1980), in his book *Competitive Strategy*, categorizes the competitive strategies in 4 types (Figure 2.2) according to two criteria: source of the competitive advantage and the competitive scope.

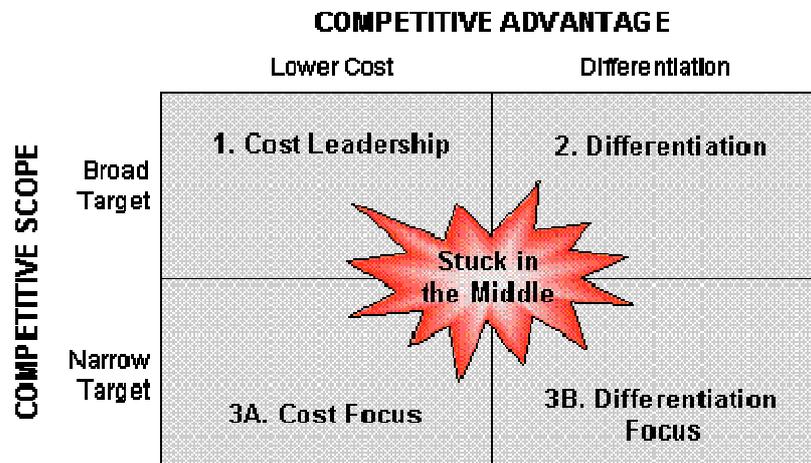


Figure 2.2. Porter's competitive strategies (Porter, 1985)

- I. **Cost Leadership:** this strategy is implemented when the source of CA is cost efficiency and the competitive scope is broad. The aim of the firm is to be the leader in the sector; often the cost leadership is linked with economies of scale. On the other hand, to implement this strategy effectively the cost leader must achieve a threshold level regarding product differentiation.
- II. **Differentiation:** this approach is generated by a differentiation CA and a broad target. This strategy seeks to provide products or services different from the one of the competitors but highly and widely valued by customers. Differentiation areas can be: product, marketing, service, image etc.
- III. **Cost Focus:** a cost focus strategy is implemented when the firm CA is cost efficiency but its target is rather narrow. It is the equivalent of the cost leadership strategy, only applied to a smaller context; in other words, the company targets only a certain market with unique characteristics and strives to be the cost leader in it.
- IV. **Differentiation Focus:** a differentiation focus strategy provides highly perceived products/service benefits, typically justifying a price premium, usually only to a selected market segment (or niche market).

When a company does not pursue clearly any of the above mentioned strategies it is defined by Porter (1980) as *Stuck in the Middle*. In this case profits are low and the company is doomed to fail unless a major shift towards another defined strategy takes place.

2.1.2 The Value Chain

Considering that the main objective of a company is to a value which is important to customers, it is relevant to understand which activities are essential in creating the value within the company. To this regard, a useful tool is supplied by the Value Chain (Porter, 1985), shown in figure 2.3. This concept describes *the categories of activities within and around an organization, which together create a product or a service* (Johnson et al., 2008).

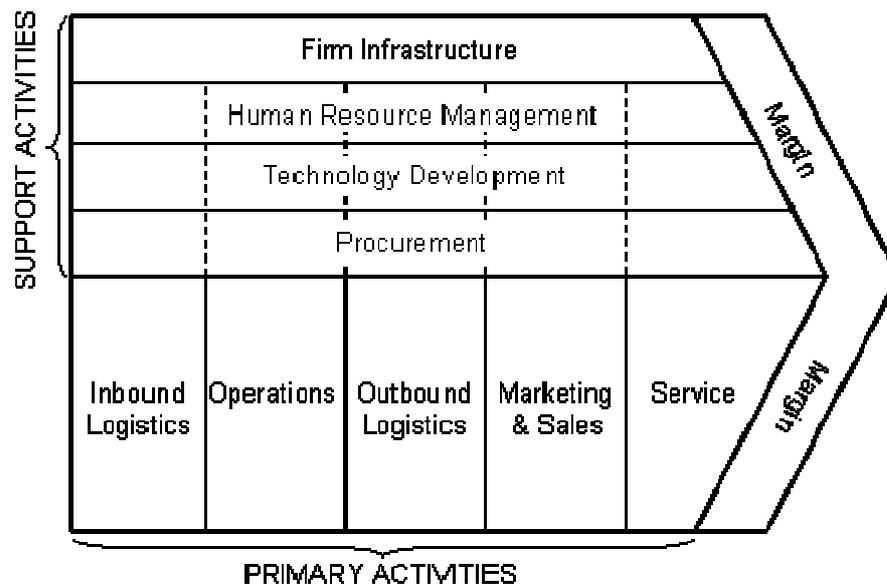


Figure 2.3. The value chain within an organization. (Porter, 1985)

First of all, a company's activities are classified in primary and support activities. The former are activities which are directly related with the creation or the delivery of a service or a product. As the name suggests, support activities are meant to help and coordinate the effectiveness of primary ones. Primary activities consist of:

- *Inbound logistics* are activities concerned with receiving, storing and distributing inputs to the (intermediary) products. This includes material handling, stock control, etc.
- *Operations* are activities concerned with transforming the inputs into the final products: machining, manufacturing, packaging etc.
- *Outbound logistics* are activities concerned with collecting, storing and delivering the products to customers. Warehousing, handling, etc., are included.
- *Marketing and sales* are activities concerned with getting the customers to know and to buy the products. Includes: channel selection, advertising, pricing, market selection, etc.

- *Service* consists of activities that maintain and improve the value of the product. Service includes: installing, repairing, training, etc.

Support activities are listed and briefly described below:

- *Procurement* comprises the processes occurring for acquiring resources and inputs
- *Technology Development* comprises the management of technologies directly with products, processes or resources.
- *Human Resource Management*: these activities concern recruiting, managing and training people within an organization
- *Firm Infrastructure* deals with planning, financing, quality controlling, information management and the structure of an organization.

For the objective of this research, namely the characterization of the pig carcass valorization process, the analysis of support activities may be discarded. They are important to support the value creation strategy and the operations needed to achieve the strategic goals. However, we need to limit the research scope. Support activities are, hence, left to further research.

The purpose of this project is to get insight on how the carcass and the end products are generated and delivered to the market, and therefore in next section the focus will be centered in particular on these two primary activities.

The question is still how companies can choose the strategy to most suit them and what primary (and support) processes are needed to achieve the strategic goals set. This is addressed in the next sections.

2.2 Marketing Theory

Marketing is concerned with identifying customer needs and wants, searching for the right target markets and designing appropriate products, services and programs to serve these markets. (Barakat 2000). The goal of marketing is: *“to create customer satisfaction by building value-based relationships with customers, in conjunction with other internal and external business units. The end-result is gaining market leadership by understanding consumer needs and finding solutions of superior value, quality, and service”* (Barakat, 2000).

In the previous section, the main concepts regarding competitive advantage and competitive strategies have been briefly reviewed. However, for a company, to gain a competitive advantage and hence to pursue a certain value creation strategy in a specific market, it is of paramount importance to segment and target the markets which appear the most attractive. These two processes are indispensable for a certain firm to be profitable and so they will be reviewed in this section.

2.2.1 Market segmentation

A market segment consists of a group of customers who share a similar set of needs and wants (Kotler and Keller, 2009). Consequently, *segmentation provides insights into different kinds of customer behavior and can make marketing programs more efficient* (Lehmann and Winer, 2008). Therefore, market segmentation is a useful tool for companies to create or optimize their products offering. According to Lehmann and Winer (2008), segmentation is indeed *a compromise between treating each customer as unique and assuming all customers are equal*.

Segmenting markets can be regarded as the final step of a value creation strategies. Indeed, to create fully a valuable product is essential to find a market where its customers understand and acknowledge the product of a certain value. Segmenting is then related to the value creation strategies of Porter illustrated in section 2.1. In particular, a good segmentation is essential for those value creation strategies focusing on serving a determined group of end customers trying to achieve an added value. It is important for them to effectively identify the characteristics and qualities of customers who have to be targeted, otherwise the entire chain of the value creation becomes useless. For cost leadership strategies segmentation may be regarded of less importance because their aim is to deliver a product at a threshold level and therefore these companies do not seek to earn any extra value. However, also for these firms market segmentation provides useful information regarding their main customers. Consequently, segmenting markets can help cost leadership companies to improve the usage rates of their products and the points of contacts with customers.

Segmentation of consumers is mostly done on the basis of several characteristics like age, household size, number of children and education etc. In this report several characteristics can be identified and an overview of total segmentation criteria is given in the table 2.1.

Table 2.1 Overview of total segmentation criteria (Wedel and Kamakura, 1999)

	General	Product-specific
Observable	Cultural, geographic, demographic and socioeconomic variables	User status, usage frequency, store loyalty and patronage
Unobservable	Psychographics, values, personality and life-cycle	Psychographics, benefits, perceptions, elasticity, attributes, preferences, intention

According to Kotler and Keller (2009), the key in segmenting market is recognizing consumer differences. The main segmentation areas and their relative variables are the following:

- **Geographic:** this type of segmentation entails dividing markets into different geographic areas such as nations, states, cities or neighborhoods. Sometimes geographic data are combined with demographic data during market segmentation. However, for clarity of exposition, these variables are kept separate in this report.
- **Demographic:** in this kind of segmentation markets are divided into groups on the bases of variables such as gender, age, income, family size, occupation, education, etc. Demographic variables are highly used by marketers because they are easy measurable and are often associated with customers' needs and wants (Kotler and Keller, 2009).
- **Psychographic:** *psychographics is the science of using psychology and demographics to better understand consumers* (Kotler and Keller, 2009). In this segmentation, customers are divided according to personality traits, lifestyle and values. Often people belonging to the same group show similar profiles.
- **Behavioral:** in this segmentation area, markets are divided in groups according to knowledge, usage and attitude of the buyers towards a product.

Besides market segmentation, a firm can implement other marketing approaches to identify relevant markets. Mass marketing is concerned with mass production, mass distribution and mass promotion of a product (Lehmann and Winer, 2008). The rationale for mass marketing is that the products are conceived for the largest potential market.

Niche marketing aims at focusing on a narrowly defined customer group looking for a very distinctive set of benefits. In this type of marketing, companies focus so well on their customer group that the latter is willing to pay a price premium for the offered product or service (Kotler and Keller, 2009).

The other marketing approaches tend more and more towards customization, and they namely are local marketing and individual marketing. The former attains tailoring marketing programs to the needs and wants of local customer groups in certain areas or neighborhoods. Local marketing concentrates on getting as close as possible to a certain group of customers (Kotler and Keller,

2009). On the other hand, the ultimate level of tailoring marketing programs to individual customers is Individual Marketing. In this marketing approach, each single customer is conceived as a distinct segment group leading to the so-called *customerization*. In customerization, the relationship between firms and customers is reverted; the firm does not require prior information about the customers anymore, but in contrast it is the latter who requests or designs a product or a service offering of their choice (Kotler and Keller, 2009).

The marketing approaches and market segmentation variables described above are valid also for companies active in the business to business (B2B) markets. However, some distinctive variables such as operating variables need to be included. A table for the most relevant segmenting criteria used in B2B market is presented in the table 2.2.

Table 2.2 Major segmentation variables for B2B markets (Bonoma and Shapiro, 1983)

Demographic	Industry, company size, location
Operating variables	Technology, user or non user status, customer capabilities
Purchasing approaches	Purchasing-function organization, power structure, nature of existing relationship, general purchasing policies, purchasing criteria
Situational factors	Urgency, Specific application, Size or order
Personal characteristics	Buyer-seller similarity, Attitude towards risk, Loyalty

The purpose of this project is to get insight into how the carcass and the end products are generated and delivered to the market. In this section, we described market segmentation and its importance for companies to generate and deliver value to customers.

Investigating thoroughly market segmentation strategies can be a very complicated and costly process, both in time and economic terms. Moreover, the examination of unobservable variables requires knowledge in consumer behavior theories and other areas which are out of the field and the scope of this project. In addition, in this project market segmentation of companies is an area of investigation and not the main central focus of the report.

Therefore, for the scope of this research only observable and general variables of market segmentation will be taken into account (first box on the top left of table 2.1), with a special focus on geographic and demographic areas.

2.2.2 Market targeting

After a company has divided the overall potential market in segments, it has to face the challenge to evaluate and select them. Five possible market selection patterns (Fig. 2.4) can be defined according to the markets and products where the company is focusing on: single-segment concentration, selective specialization, product specialization, market specialization and full market coverage (Kotler and Keller, 2009). It is likely that according to Porter's (1985) model of value creation strategies, companies implementing diverse value creation strategies have also different market targeting approaches. For example a focus strategy can be tailored for one specific market or for many of them; the same holds when the main focus area is the product. The market selection patterns identified by Kotler and Keller (2009) are described in detail below.

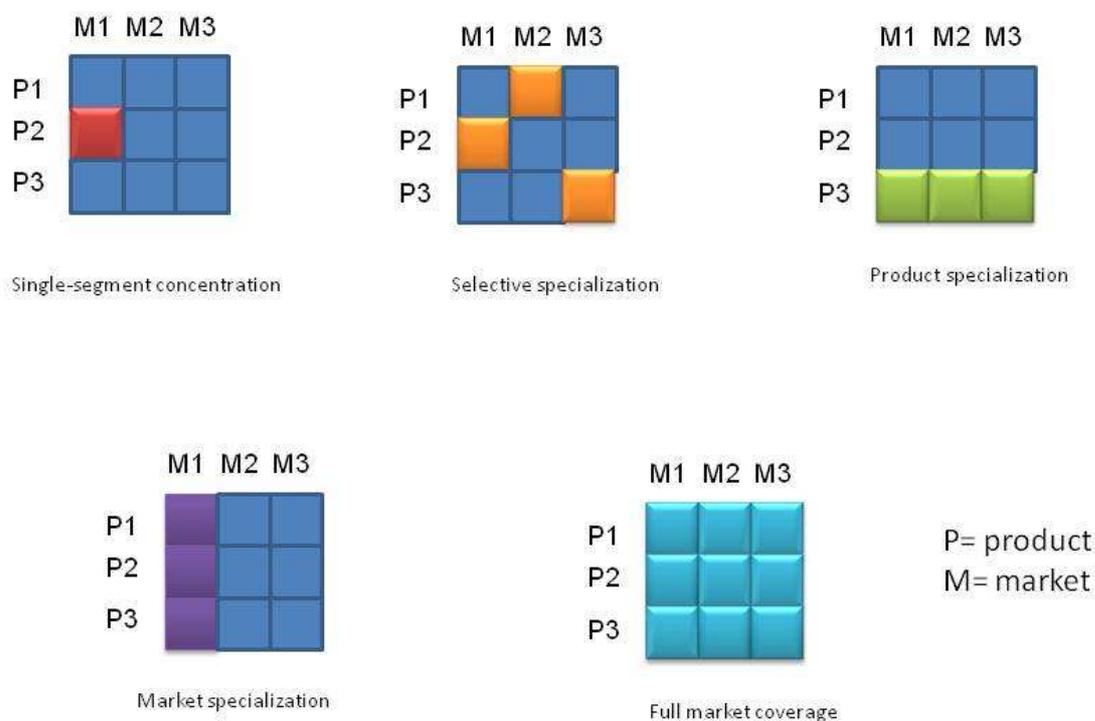


Figure 2.4 Target market selection patterns (Kotler and Keller, 2009)

Single-segment concentration is pursued when a company concentrates its marketing efforts on a single defined segment or on *supersegmenta*, a set of segments sharing one or more similarities. In so doing, the company achieves a strong knowledge of the market and strengthen more and more its position and reputation in that market. The main risk concerned with single-segment concentration is that it can lead to a high competition in that specific market.

Selective specialization is when a firm selects a set of market segments, each equally attractive and potentially profitable. The segments may be either linked or not linked at all to each other: this lead to more spread risks in terms of finance but also of competition.

Product specialization is implemented by companies which decide to specialize on a certain product regarding its features and quality. A firm pursuing this approach target different markets on

the basis of the peculiarities of its specific product. The main risk deals with the rise of substitutes or new technologies which can change the position of that product within the market.

Market specialization in contrast is the opposite of the previous pattern. In this type of market targeting the firm focuses on many and different needs of the customers in a specific market. Market specialization can be very profitable because it can lead to a strong reputation for the company and in turn to strong customer equity. However, in this case the company is highly dependent and sensitive on the market and its changes. A shrink in size or a sudden trend can easily change the relationships and the market.

The last market targeting strategy is full coverage. In this approach the firm strives to serve all the potential markets with all product lines it possesses. This strategy can be implemented only by very large companies because of the large amount of investments and products needed. Firms attempt to overcome this downturn covering the markets in two ways: undifferentiated marketing and differentiated marketing. In the latter, the firm is active in different markets segments designing and bringing into the markets tailored products, whereas in the undifferentiated marketing the company produces only one offering and enters the different markets with that one, ignoring markets' distinctiveness.

For the scope of this report is important to evaluate how slaughtering and/or processing companies deal with the issue of targeting marketing for their products. This concept is important in order to understand and detect their value creation strategies. Moreover, the identification of a targeting pattern and the relative involved markets may lead to the discovery of possible challenges which could hamper the full exploitation of a value creation strategy.

2.3 Operations Management Theory

Operations play a decisive role in organizations. In order to have a clear characterization of what operations are, Vonderembse and White (1996) use the following definition: *operations are the processes within organizations that acquire inputs and transform these inputs into outputs consumed by the public. Operations employ labor and management and use facilities and equipment to change material into finished goods or to provide services.*

Therefore, the ongoing process of directing, controlling and managing operation is a vital task and it plays a critical role in the success of companies in the markets. This crucial process is called operations management, which Krajewsky and Ritzman (1999) define as follow: *Operations management refers to the direction and control of the processes that transform inputs into goods and services. This function is essential to systems producing goods and services in both profit and non profit organizations.*

Operations management theory is related to Porter's value chain model (Porter, 1985). In particular operations management theory provides more detail and ways to organize the processes.

2.3 Competitive priorities

The previous section and section 2.1 have reviewed the centrality of gaining and exploiting a competitive advantage for companies in order to fulfill customer requirements and therefore to implement an effective value creation strategy. The previous text has also pointed out the tight relations between marketing and operations. Is so doing, operations can be regarded as a critical step in gaining competitive advantage.

Organizations can gain competitive advantage and consequently implement their strategy through operations. *Competitive capabilities are the outcome of well designed business processes and enable the firm to satisfy its customer requirements.* (Vonderembse and White, 1996). The choice and the exploitation of these competitive capabilities hence lead to the outperformance of competitors operating in the same industry and markets.

According to the analysis of Krajewski and Ritzman (1999) and Vonderembse and White (1996), competitive priorities can be grouped into 4 categories:

- Cost (or Productivity)
- Quality
- Time
- Flexibility

These competitive priorities drive and regulate operations and therefore affect directly the processes and the way they are organized. Competitive priorities are the translation at a practical level of the overall value creation strategy into the manufacturing process of a company. In particular, a cost leadership strategy will have cost and time as priorities; whereas a firm which differentiate itself from competitors or which aims at specific markets will prioritize mainly quality and flexibility.

Cost: lowering price can attract new customers and increase the product's demand. This issue could be directly linked with the productivity of the organization. Productivity can be defined as the ratio of the outputs divided by the inputs used to achieve those outputs (Vonderembse and White, 1996; Krajewski and Ritzman, 1999). Indeed, an increase in productivity lowers production costs and in turn the price of the end product, providing a basis for competitive advantage.

Productivity is influenced mainly by three aspects: organizations structure (number, size, location etc.), equipments and methods, individual jobs and activities analysis. The first issue deals with dimensions of the organizations. In general, few and large facilities should increase productivity. However, that is not always the case; the key is matching these characteristics of the organization with customer requirements. The equipment and methods need to fit within the process and the organization. The number and their efficiency should be coordinated in order to have the highest output at the lowest expense. The same holds for individual jobs and activities.

Quality: for firms that want to be competitive in the market another priority is quality. Quality is related to technologies and their advances, which can be more or less rapid depending on the industry in which the organization is active. Quality deals with high-performance design and consistent quality. High performance design affects the operations performance which is required in manufacturing the product and the introduction of new features or greater durability. Consistent quality measures the frequency with which the product meets design specifications, in order to meet also customer specifications.

Time: time-based competitive priority deals with speeding up the processes of the organization in to suit best customer requirements. A company seeking this priority can focus on one of the three following measures: fast delivery time, on-time delivery and development speed (Krajewski and Ritzman, 1999). Fast delivered time or lead time is the *elapsed time between receiving a customer order and filling it*. On-time delivery measures *the frequency with which delivery-time promises are met*, whereas development speed measures *how quickly a new product is introduced, covering the elapsed time from idea generation through final design and production* (Krajewski and Ritzman, 1999).

Flexibility: flexibility can be defined as the capacity and the ability of a firm to change the products and customers according to their demands at the lowest cost and with the lowest delay (Vonderembse and White, 1996). In so doing, firms can increase customers' satisfaction while reducing lead times. Krajewski and Ritzman, (1999) distinguish two types of flexibility on which companies can focus on: customization and volume flexibility. The former is related to the ability of the firm to customize products and their features or service according to diversified demands. On the other hands, volume flexibility deals with the capacity of the organization to quickly increase or decrease the production rate in to respond effectively to fluctuations in demand (Krajewski and Ritzman, 1999).

According to Slack and Lewis (2002), the flexibility of a company is a general concept which takes the name of *total operations flexibility*. This concept is not univocal: flexibility can be further classified in 4 types (table 2.3) and two dimensions: *range flexibility* and *response flexibility*. The first concerns to what extent operations can be changed and therefore refers to the width and depth

of the changes; the second type instead focuses on how quickly changes take place into operations. The four flexibility categories according to the relative dimensions are presented in the table below.

Table 2.3 The range and response flexibility of the four types of flexibility according to Slack and Lewis (2002).

<i>Total Operations Flexibility</i>	<i>Range Flexibility</i>	<i>Response Flexibility</i>
Product/service Flexibility	The range of products the company has the capability to design, purchase and produce.	The time necessary for a company to develop or modify the products and/or their processes to the point which regular production can start
Mix Flexibility	The range of products a company produce in a certain time frame	The time to adjust a certain products mix in a given time period
Delivery Flexibility	The extent to which delivery time can be brought forward	The time to reorganize operations in order to move the delivery date
Volume Flexibility	The absolute output which can be achieved for a given product mix	The time needed in order to change the aggregated level of output

The analysis of the competitive priorities will be important when analyzing value creation strategies in slaughtering and processing companies active in the pork chain. In particular, the analysis of how and to what extent companies implement cost, time, quality and flexibility will lead to the identification of their value creation strategy and to possible opportunities and challenges.

2.4 From farm to fork – the pork chain

Until now we have discussed the theories for companies as single entities. Food supply chains typically consist of chains of companies that together, in sequence, perform the processes needed. The focus in this report is on the slaughter stage, because slaughterhouses have a large influence on value creation (Hoste, 2010). However, value must be available for all actors in the chain. A value creation strategy and accompanying marketing and operations should, therefore, be consistent and acceptable for the whole chain. In order to have a clearer understanding of the pork supply chain and the processes which a live pig goes through when it is slaughtered, these two issues will be further detailed in the following sections.

2.4.1 Pork Supply chain

Pork chains are complex supply chains of different parties from farm to fork (Wognum et al., 2008). Although some aspects can vary and despite geographical differences, most pork chains among various countries and regions look similar to each other (Figure 2.6).

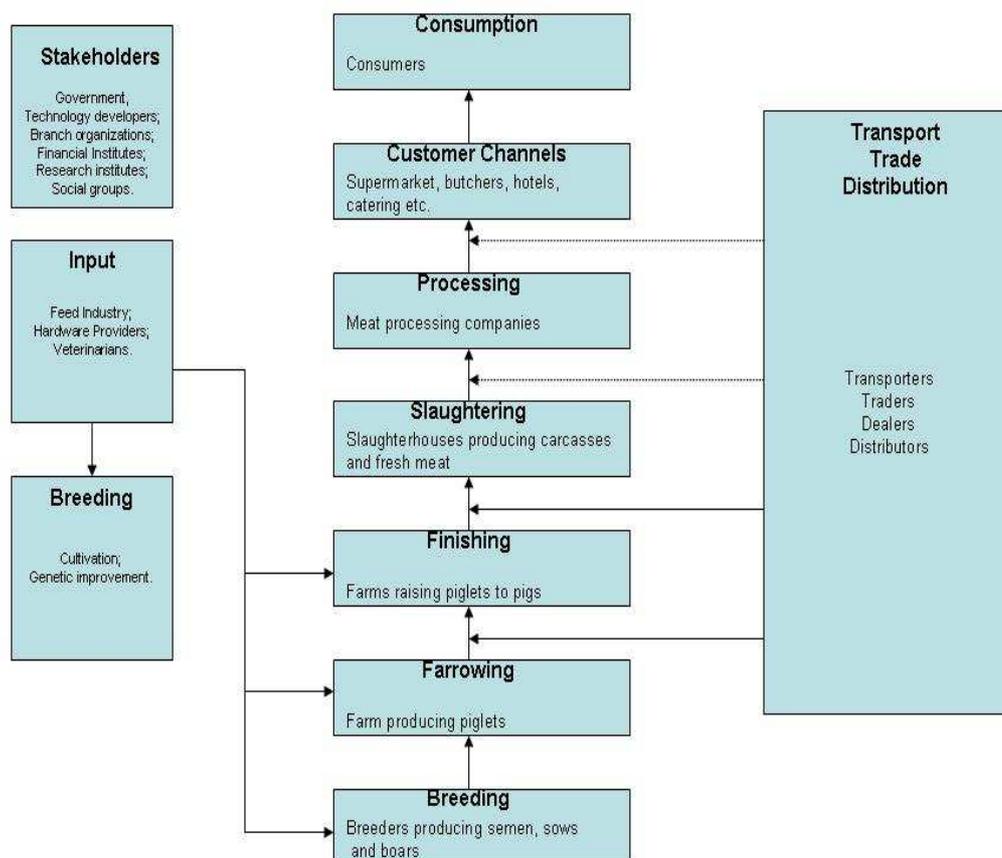


Figure 2.6. A typical pork chain (Wognum et al., 2008)

In the left part of the figure the main inputs to the chains and stakeholders are depicted. In the middle the pork production process is described. The first stages, from breeding to finishing, are also called under the name of primary production process. Thereafter, the pig is slaughtered and processed by specialized companies. These firms can focus only on the slaughtering process or may include also the following step, the processing, where the carcass and the other components of the pigs are cut, packaged and stored.

At this stage of the pork supply chain companies may vary considerably according to the value creation strategy they pursue. However, value must be available for all actors in the chain, and in particular the relationships with the main suppliers (farmers) and buyer (retailers) is critical. A value creation strategy should, therefore, be consistent and acceptable for the whole chain.

Finally the meat cuts and the meat products arrive on the table of end consumer through one of the many channels (retailers, butchers, catering etc.). However, slaughtering and processing companies generate a wide set of products. Each product has different characteristics, markets, buyers and end consumers; hence, also marketing and operations strategies may vary for diverse products. For example, some firms may concentrate their operations and marketing efforts on fresh meat parts or hams, treating offal and heads as a waste product and not generating a high value out of it. On the other hand, the opposite situation could also take place. For some companies, meat parts may exert only part of the business whereas other carcass components such as heads, paws and offal, when properly processed and marketed, may generate the largest revenue.

As mentioned above, the body of a pig can be processed into a large set of products which in turn can generate value. To have a clearer picture of this set of products and to understand the destiny of each of them, in the following section the slaughtering and processing processes will be described and a categorization of products will be made.

2.4.2 Slaughtering process and product categorization

Slaughtering is a key process for meat companies and in general for all the stakeholders of the pork supply chain. At this stage, indeed, from only one input, the live body of the pig, an entire set of different products can be generated.

A schematic representation of the slaughtering process is provided in figure 2.7.

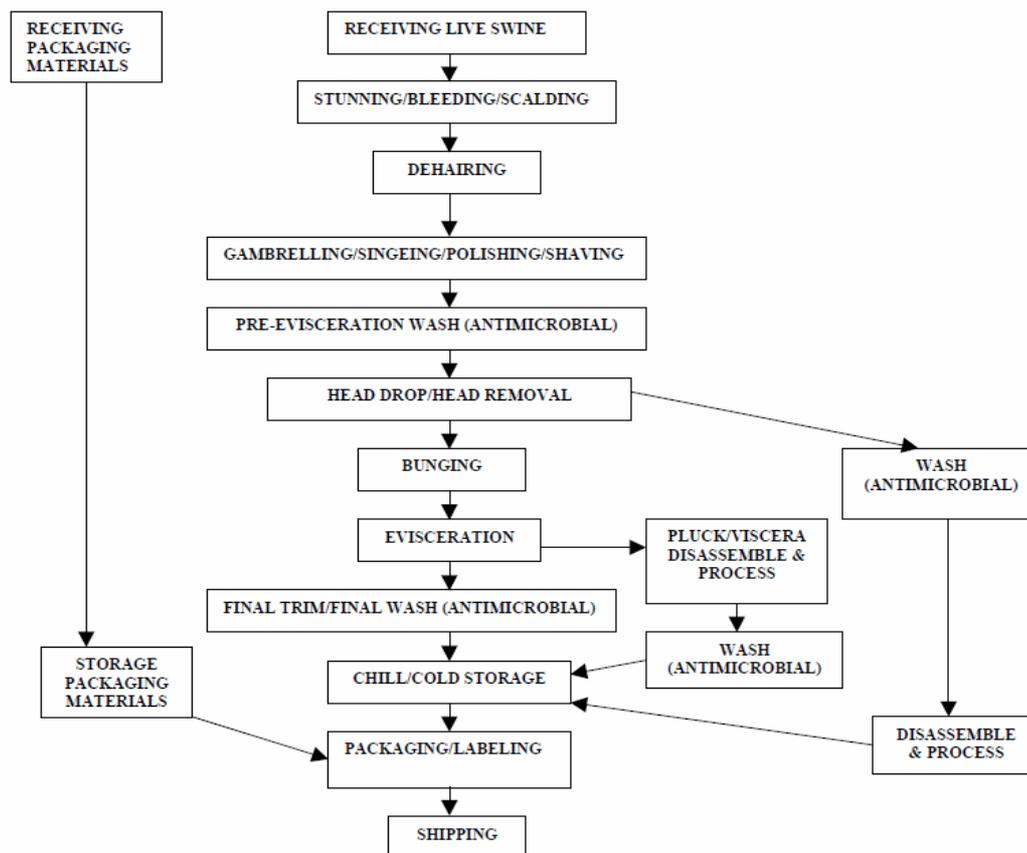


Figure 2.7 The slaughtering process of a pig (USDA,1999).

After the pigs are delivered, the animals have to be housed in the slaughterhouse for 2-3 hours to recover from the stress of transportation. Thereafter, the pigs go through several steps in which the real slaughtering process takes place: stunning, bleeding and scalding. Scalding together with de-hairing, polishing, shaving etc. is a critical stage because it guarantees a sufficient hygiene level, which is essential to not contaminate the carcasses with bacteria such as Salmonella, E. Coli etc.

At this point pig carcasses are ready to be cut. Firstly heads and paws are removed: these parts follow another line and they are processed or directly chilled and stored. Then, the carcasses are eviscerated and plucks are collected. Plucks is a general term to identify the heart, kidneys, lungs, liver and other internal organs. Their weight varies approximately between 10-12 kg per pig. These organs are then further processed and stored.

Plucks can be divided into two main groups: plucks suitable for human consumption and plucks used for animal feed (Danish Crown, 2010). The popularity of certain parts of the pig and the different plucks varies from one country to another. For example, what is regarded as a specialty in China is possibly considered waste in Europe.

After offal has been removed, the remaining carcass consists mainly of meat parts. Therefore, at this stage the carcass can be cut according to the customer's and company's wish. Tailored orders are possible, especially for firms pursuing niche markets. However, the standard cuts are the following: hams, neck, shoulders, and "middle", which can be additionally divided in loin and belly. These parts then follow different production lines and can be directly sold or further processed to other meat products. Indeed, their destiny in the market is independent from each other. For

example, a Dutch slaughterhouse can export hams to Italy and Spain, while the neck of the same carcass can go to Greece and the shoulders to Germany. During the cutting and processing, meat gets separated from bones. The latter can be considered also another product, since it can be utilized by the feed and other industries.

The entire set of end meat-products is consequently very variable and it depends on many aspects such as pig race, farming strategy, geographical areas etc. However, for the purpose of this report and for clarity of exposition a categorization of the end products generated from a pig carcass will be outlined:

- End consumer meat products
- Industrial meat
- Head, paws and bones
- Edible Plucks and blood
- Non edible plucks

Table 2.4 categorization of products generated from a slaughtered pig.

Category	Description
End consumer meat products	To this category belongs meat which has been prepared for consumption and so ready to be eaten. Meat can be cut and preserved by smoking, curing, salting, or by adding preservatives (e.g. nitrate). Examples of end consumer meat products include filets, hamburgers, ham, bacon, pastrami, salami, sausages and some types of minced meat (Cancer Council 2010).
Industrial Meat	It is mainly constituted by the muscular component of the live animal before processing. According to the piece of meat, also bones and fat can be found. The standard cuts are: hams, neck, shoulders and “middle”. These cuts can be further processed to singular pieces of meat and generate a vast set of products.
Head, paws and bones	These are by-products of the slaughtering process. Although they could be considered as waste, these components can generate large value. In the Far East markets, they are highly appreciated by consumers (i.e. ears and paws in China) (Danish Crown, 2010).
Edible Plucks and Blood	“Plucks” is the term for the heart, kidneys, lungs, liver and other viscera. The popularity of certain parts of the pig and the different plucks varies from one country to another (e.g. lungs and intestines are highly appreciated in Germany for making sausages).
Non edible Plucks	This group of plucks is used for two kinds of animal feed: pet food for dogs and cats, and as feed for fur animals. Plucks used for animal feed include the pig’s spleen, throat, lungs, the sow’s udders and other bloody residual meat. Plucks which can not be utilized in the feed industry can still be used in the biofuel, pharmaceutical and film industry.

2.5 Theoretical Framework

In this section of the literature study a theoretical framework for this project derived from the literature discussed above will be outlined (Figure 2.6).

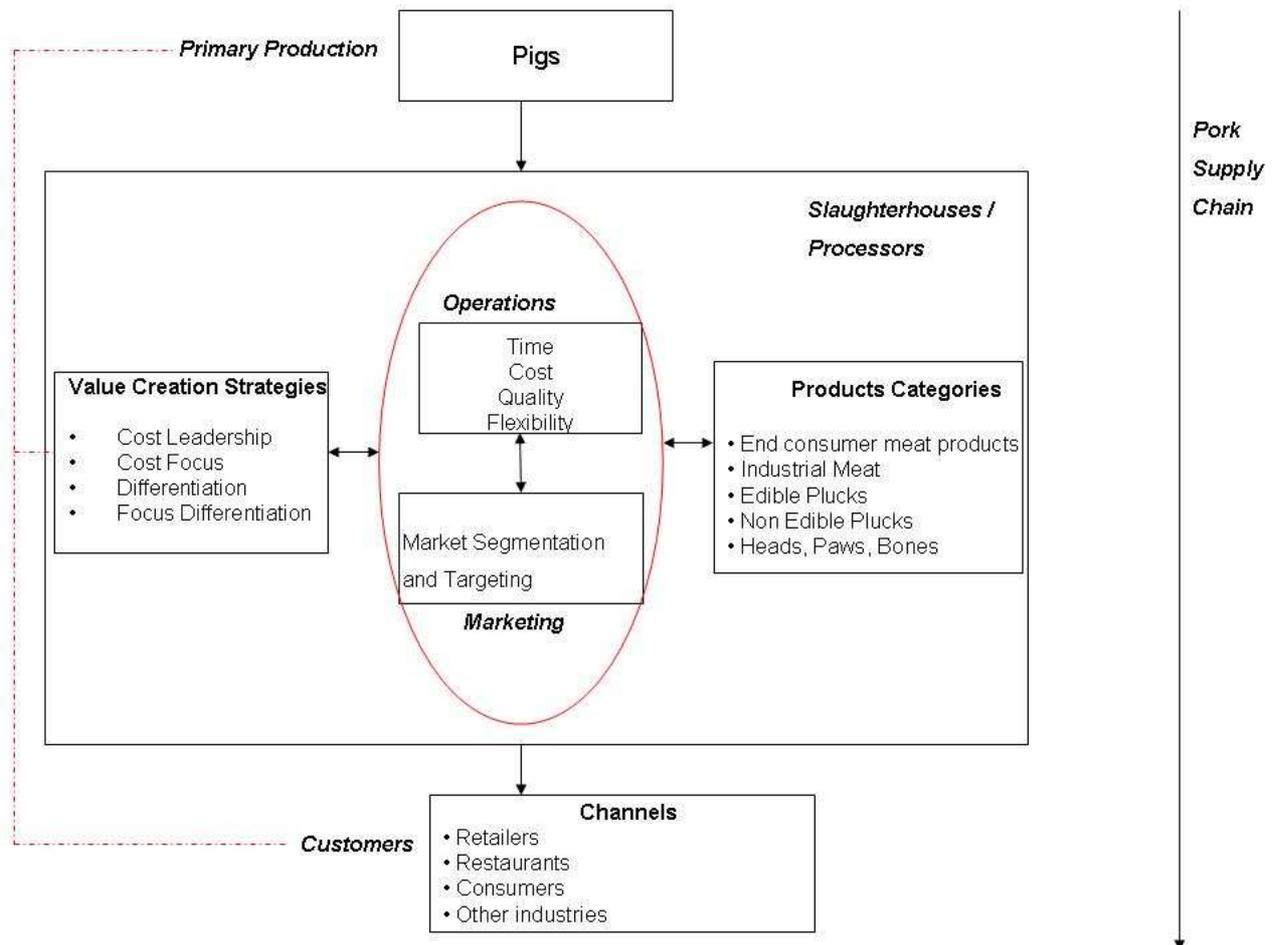


Figure 2.8 Theoretical Framework

The model presented in figure 2.8 starts with primary production. This is indeed the first stage in the pork supply chain (as sketched in the right side of the figure) and pigs are produced. These animals are the input for the following actor in the chain: slaughterhouses and processing companies.

These firms can generate a vast set of end products. From the same input materials, these products can be categorized as follows: fresh meat parts, processed meat, edible plucks, non edible plucks and heads, paws and bones. The key drivers of the end products generation are two value chain primary activities: operations and marketing, as identified previously in this chapter. Marketing is a key issue in identifying, select and managing market demands. This is a critical issue since demand for pork is highly differentiated considering globalization and the numerous products which can be produced from a pig carcass. Operations is also essential because this activity has to translate in practice the work of marketing; in particular operations has to choose and implement the most appropriate competitive priorities in order to fulfill the customer requirements. Demands, indeed, can vary according to costs, quality etc. and hence the firm has to set up processes and operations

which are able to cope with demands. The strict relationship and interaction between operations and marketing has been highlighted in the picture by a double oriented arrow.

The combination of these two activities and its success can determine a company's competitive advantage. The latter is then the main determinant of the value creation strategy of the organization as discussed in section 2.1. From literature 4 value creation strategies have been identified and portrayed in the framework: cost leadership, differentiation, focus differentiation and cost focus. On the other hand these strategies affect the value and the position of the products in the market, hence shaping and influencing the market demand for the products themselves. Only if a strategy is appropriate the product can be successfully launched into the market and the CA sustained.

Operations and marketing are the connection point between a company's strategy and products, hence say theory and practice. Therefore, these activities exert a critical role in the firm's business and then they also constitute a fundamental step where bottlenecks can be identified. In particular, all the components and activities in the company should be well coordinated among each other in order to generate the most value out of a set of products. However, the not perfect implementation and coordination of operations and marketing activities, such as competitive priorities (time, quality, cost and flexibility) and market segmentation and targeting, can constitute main challenges in the full pursuit of a value creation strategy. In the theoretical framework, this critical step is highlighted with a red circle.

After pigs are slaughtered and the various product categories are generated, the outputs need to be sold. Several channels can be identified. Meat and other parts of the carcass can be delivered to retailers, restaurants, catering, other processing industries or directly to the end consumers.

The value which is mostly generated in the slaughterhouses and processing companies however involves also the other actors in the chain and therefore the value creation strategy has to take into account also them and their satisfaction to be successful. This may be another challenge to be overcome to fully profitably implement a value creation strategy. This relationship has been depicted with a red dotted line in the framework.

2.6 Chapter Summary

In this chapter the following research questions are answered:

- *What relevant information can be extracted from the scientific literature and field experts on value creation theory, marketing theory and operations management theory to enable the analysis of the carcass valorization process?*
- *Which is the most suitable theoretical framework for this research?*

To be able to analyze and fully understand the outcome of the desk and empirical research in the next chapters, it is fundamental to have knowledge on specific theoretical topics in the value creation, marketing and operations management theory. Regarding the value creation theory, in this chapter it has been emphasized that value creation derives from the competitive advantage which a certain company has. Hence, the strategies implemented by companies to compete may also be seen as strategies to deliver value to customers. Then, four particular strategies have been identified: cost efficiency, cost efficiency focus, differentiation and focus differentiation. Marketing is also a key issue for the carcass valorization process. Companies may select and choose different markets for their products. Consequently, the concepts of market selection and targeting have been detailed. In particular 5 marketing approaches have been described: single-segment concentration, selective specialization, product specialization, market specialization and full market coverage.

Operations management translates into practice competitive and marketing strategies. Firms can stress 4 operations priorities: cost, time, quality and flexibility. The latter is a more complex concept and can be further classified in range and response flexibility.

Other important concepts which were studied to have a complete theoretical framework are: pork chains and the pigs slaughtering processing taking place in slaughterhouses and processing companies. In particular, for clarity of exposition and to better understand the pig carcass valorization process, the pig carcasses have been classified in 5 groups of components: end consumer meat products, industrial meat, edible plucks, non edible plucks and head, paws and bones.

The study and analysis of these concepts has led to a proper theoretical framework for this research, which is presented in section 2.5. This model relates in particular the carcass components to the overall value creation strategies. Key issues in this relationship are market choice and competitive priorities, and it is at this level where possible bottlenecks can be.

Another possible bottleneck is the relationship between slaughterhouses and the other actors in the pork chain. Indeed, the slaughterhouses are the main shapers of the value creation strategy. However, this strategy belongs to the entire chain, involving also primary production and retailers. Consequently, an high level of coordination and synergy is required among all the stakeholders in the chain.

3 Methodology

The research question which needs to be answered in this chapter is:

- *What methodologies for empirical research suit the theoretical framework to answer the research question?*

The aim of this chapter is to describe how and what needs to be applied during the research in order to come up with an answer to the main research question.

This chapter starts describing the research strategy, which concerns how the research will be carried out. Also disclosure methods are described. Then, in the following section limitations of the project are identified with regard to reliability, validity and representativeness.

3.1 Research strategy and design

The research strategy of this project is a combination of the Desk Research Strategy and Case Studies Strategy (Verschuren and Doorewaard, 2005; Yin, 2003).

Desk research is *a research strategy whereby the researcher uses material produced by others* (Verschuren and Doorewaard, 2005). This definition includes books, articles, internet sources and in general all kind of secondary data. This approach has been used during the preliminary part of this research project; at that stage relevant theories, concepts and information needed to be identified in order to get a theoretical framework regarding the ongoing carcass valorization process. This strategy has led to the identification of possible value creation strategies for slaughterhouses and meat processing companies and to the identification of where bottlenecks could reside. Moreover, desk research was also utilized during the analysis of the cases, where information collected through books, articles and websites aided and further detailed the analysis of the data gathered from experts.

To get a deep and thorough view of the object of this study the main strategy which has been used in this research project is the Case Study strategy (Verschuren and Doorewaard, 2005; Yin, 2003). Verschuren and Doorewaard (2005) describe it as *a type of research during which the researcher tries to gain a profound insight into one or several objects or processes that are restricted in time and space*. The main objective of this research is to gain insights into the pig carcass valorization process taking place in companies at the moment. Then, the object of study is limited in time and space and consequently the case study strategy appears the most suitable for this project.

Yin (2003) identifies three types of case study research varying according to the objective of the research: exploratory, explanatory and descriptive. Since our goal is restricted to get insights into the ongoing carcass valorization processes and their relative bottlenecks, this study can be regarded as belonging to the first category, namely the exploratory type of Case studies.

Case studies research can have four research designs, based on a 2x2 matrix. The first classification of case studies depends on the number of the cases: there can be a Single case study or a Multiple

Case study, in which more cases are analyzed. Within these two variants, the unit of analysis can be unitary or multiple, leading to a further classification in Holistic case studies and Embedded Case Study. These four types of case studies research design are presented in figure 3.1.

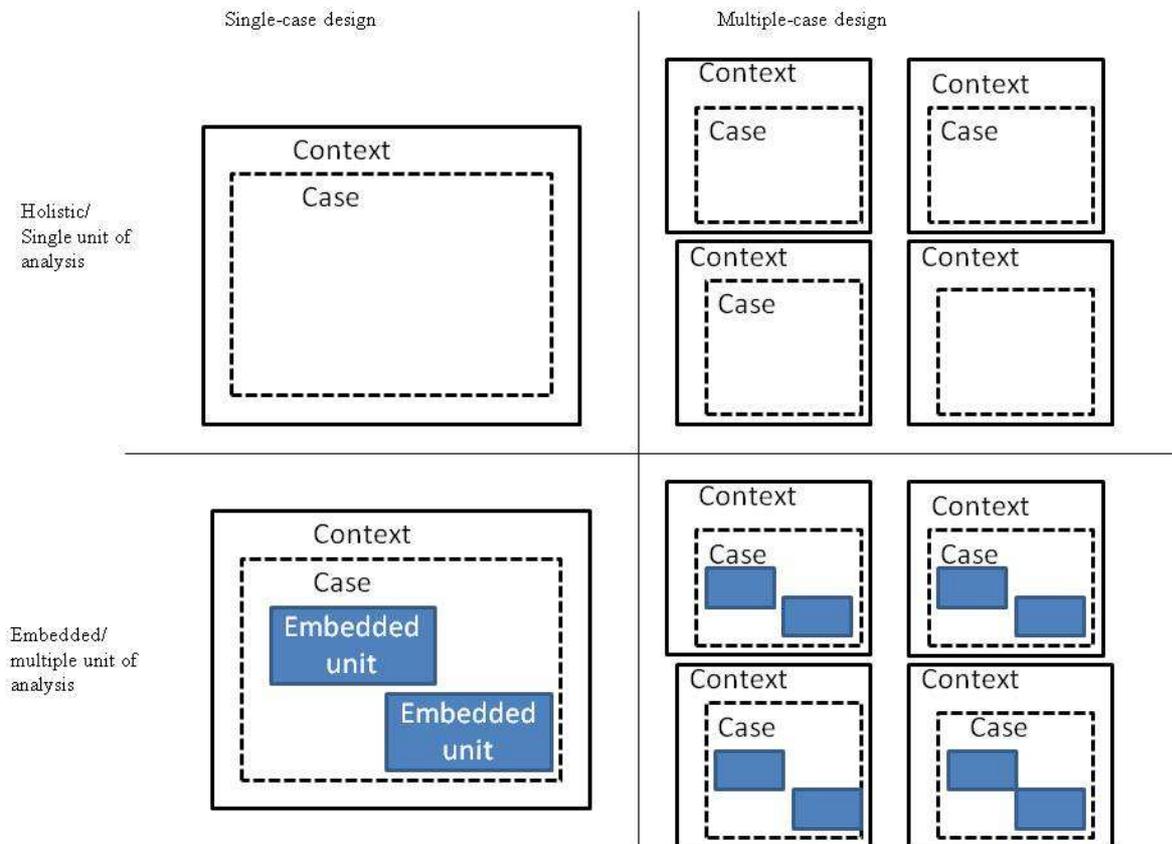


Figure 3.1 Design types for case studies (Yin, 2003)

Considering the main objective of this paper is to identify how companies valorize all the components of pig carcasses a multiple case design have been chosen. Moreover, since the unit of analysis, namely the carcass valorization process, is single and similar for all then cases, then the holistic approach will be taken. In conclusion, according to Yin's (2003) distinction, the case study design which suits best this research and which has consequently been chosen is the holistic multiple-case study design.

The method of disclosure consists of interviews with experts from the cases and these will be further detailed in the following sections.

3.2 Data sources

In this research different data sources have been consulted and used. For clarity of exposition in this section a distinction will be made between secondary data, used during the literature study and to interpret the results, and the case studies.

3.2.1 Secondary data

The secondary data used during this project consists of handbooks, scientific articles and information gathered through media and internet. A categorization of these data according to the source and to the concepts which have been utilized is given in Appendix 1.

3.2.2 Case studies and interviews

To get insights into the ongoing pig carcass valorization processes and to identify their bottlenecks, several cases of slaughtering and/or processing companies and organization active in pork meat have been identified. The cases have been selected by the researcher, based also on the advice of experts and supervisors. These are: De Groene Weg and Il Consorzio del Prosciutto di Parma. Table 3.3 gives an overview of the cases.

Table 3.3 Data sources cases

Case	Nation	Industry	Company type	Homepage	Interviewee
De Groene Weg	Holland	Organic meat	Owned by VION but independent	www.degroeneweg.nl	Business Developer
Consorzio del Prosciutto di Parma	Italy	Pork Meat	Consortium of ham processing companies	www.prosciuttodiparma.com	Vice Director

Experts from the cases have been contacted and interviewed. Considering the qualitative degree of this research project and its explorative purpose, interviewing experts from the cases have been chosen as the most suitable disclosure method.

The first expert is the business developer of De Groene Weg. The second person who has been interviewed in this research is the vice director of Il Consorzio Del Prosciutto Di Parma. Due to geographical issue, this interview will be held via telephone.

Interviews is one of the most relevant method to gather relevant information from case studied (Verschuren and Doorewaard, 2005; Yin, 2003) and they can be classified in structured, semi-structured and unstructured or in-depth interviews. Structured interviews utilize questionnaires derived from a predetermined set of questions and they can be also named as interviewer-

administered questions. They are mostly used to collect quantifiable data and hence they are also referred as *quantitative research interviews* (Saunders et al., 2007).

Semi-structured interviews are characterized by the fact that the researcher has a list of themes and questions to be covered. However, the questions and their order may vary from interview to interview. In contrast with structured interviews these are also referred as *qualitative interviews* (King, 2004).

Another type of qualitative interviews are unstructured ones. In these interviews there is no structure, are mostly informal and they are used to explore in depth a general area of interest. The interviewee is given the chance to talk freely about events, topic etc. (Saunders et al., 2007).

Considering the explorative and qualitative aspect of this research, semi-structured interviews have been chosen to gather data from companies' experts. The structure of the interview, its informed consent and some questions are available in appendix II.

3.3 Validity and reliability

In this paragraph the validity of the research will be discussed. Validity can be classified in internal and external validity. Moreover, in this paragraph also the reliability of the research will be discussed.

3.3.1 Internal Validity

Internal validity concerns the absence of systematic errors, especially errors in the design of the research. Internal validity measures the extent to which the research structure enables the researchers to draw clear conclusions from the results of the research itself. In other words, internal validity is the degree to which the research design might exclude alternative conclusions: the more these alternative conclusions can be discarded, the better the validity of the research (De Vaus, 2001).

The set-up of the research and the specific research issue of the project reduce the chance of alternative findings. Moreover, to strengthen the internal validity of this research, several sources of information have been used. Within the literature study, many concepts and theories have been screened, studied and analyzed. The desk research was also enriched by inputs and confrontation with experts and supervisors, leading to the application of the triangulation approach which is critical for the validity of a research project. The empirical research has been completed by expert interviews. The interviewees provided specific information regarding the carcass valorization process in their specific companies; therefore their validity is perceived high.

3.3.2 External Validity

External validity establishes the degree to which a study's findings can be generalized beyond the immediate case study (Yin, 2003). Generalization is not an automatic process. It requires a proper

research design and the testing of the theory a second and/or a third time. However, qualitative research is not commonly being used to generalize results for the entire population (Mason, 2002). Considering that the aim of this research is to get insights into the carcass valorization process among slaughterhouses implementing different value creation strategies, generalization will not be possible. Only few cases were analyzed and hence the collected data represent only the specific unit of analysis and not the entire population. Therefore, any possible attempt to derive general theories and findings is regarded to be too pretentious and unreliable; consequently, no generalization process will be drawn at the end of the research. In conclusion, external validity of this research is not perceived high but this is in agreement with the objective of the project.

3.3.3 Reliability

Reliability is defined as the absence of unsystematic errors ('t Hart et al., 2005). It is a measure of the degree of uniformity of the data and the results of a certain research with the ones obtained by other researchers when reviewing or repeating the same study (De Vaus, 2001). As Yin (2003) writes: *the objective of reliability is to be sure that if a later investigator follow the same procedure as described by an earlier investigator and conducts the same case study all over again, the later investigator should arrive at the same findings and conclusions. Then, the goal is to minimize the errors and biases in a study.*

Within a qualitative research only a limited amount of data sources can be consulted. In this project expert interviews have been chosen. The results derived from these sources cannot be regarded as totally reliable. Indeed, the collected data depends also on the level of knowledge and cooperation of the respondents and on the moment in which the research is carried out. These last variables can not be regarded as fixed and therefore a potential future change in the markets, the companies or in the pork chains may produce completely different outcomes.

In order to reduce these pitfalls in reliability, many data sources have been utilized during the project. Moreover, the interviews have been structured and the experts have been previously informed regarding the contents in order to prepare them giving proper answers. In addition, the interviews have been audio recorded to be able to listen to them more times and therefore to reduce wrong interpretations and conclusions.

3.3.4 Other limitations

The reliability and the validity of the results may have been affected by time constraints. Indeed, time limitation was the biggest constraint during this project and it had a big influence on the research process and development. The researcher had only few weeks (end of May – end of June) to gather experts and to collect reliable and specific data regarding the cases. Probably this limited period of time might have not been sufficient to cover all the relevant information needed. Moreover, the time frame also limited the choice and the number of cases included in this research. If the project lasted more weeks, then more cases could have been included and consequently the validity and the reliability of this report would have increased.

3.4 Chapter Summary

During this chapter, the researcher answered research question 3: *What methodologies for empirical research suit the theoretical framework to answer the central research question?*

This chapter has described and discussed the methodology used for this research project. In particular, the research strategy is a combination of Desk Research and Case Studies Research. The former has been used especially in the first part of the project whereas the latter has been implemented to gather relevant data for getting insights into the carcass valorization process and its bottlenecks from companies facing this problem.

The design of the Case Studies gets inspiration from the Multiple Case Studies design described by Yin (2003). Two cases have been chosen, namely De Groene Weg and Il Consorzio Del Prosciutto Di Parma. Since this research can be classified as qualitative, experts from these companies have been interviewed to collect the intended data. Interviews were semi-structured to get deep and thorough insights on specific aspects of the carcass valorization process.

The internal validity is perceived high; on the other hand, the external validity and the reliability are not perceived high. Therefore, no generalization will be derived at later stages. This is due especially to time constraints which limited the choice and the number of analyzed cases.

4. Cases

In this chapter the results of the research, which are based on the sources detailed in chapter 3 are presented. By detailing the results, the researchers will try to answer research question 4:

How do slaughterhouses and processing companies active in the pork industry deal with the pig carcass valorization process?

Cases from slaughterhouses and processing companies active in the European pork industry have been analyzed through semi structured interviews. The interviews have been audio recorded and the transcripts can be found in the Appendices of this report.

4.1 Case 1: De Groene Weg

De Groene Weg (DGW) is a slaughtering and processing company based in Groenlo, The Netherlands. Its core business is the production and commercialization of organic beef and pork. DGW is the chain director of the organic sector in Holland, controlling and processing 90% of the organic meat in the country. It is fully owned by VION Food Group but is independent from its mother company. DGW employs about 40 people and its suppliers are 55 farms, of which most (about 90%) are specialized organic farms. This results in about 1300-1400 pigs slaughtering per week, which reach national and international customers either as pre-packed, processed or industrial meat. The vision of DGW is “to be a leading company in the production and marketing of organic beef and pork in the North West Europe”. In line with this statement, DGW is the major player in the Dutch organic pork sector; however, in the Western European market it shares this dominant position with a Danish competitor, Friland.

4.1.1 Competitive advantage

The main sources of competitive advantage for DGW are the uniqueness and the quality of the product and reliability towards customers.

The uniqueness and the quality of the products derive from the peculiarity of organic production. The organic meat is produced under strict regulations (EC 2092/91) and it has unique features compared to conventional meat. The main differentiation points are organic feed, larger square area pigs (3.5 vs. 0.7 m² per pig) and the ban of antibiotics. Moreover, quality is guaranteed also by professionalism among the chain and by technology and innovation, exploiting the connection with VION.

Reliability is related to operations priorities as flexibility and it is a key issue to build customer intimacy sought by DGW. This is in contrast with the conventional pork market which is more a day-to-day market and customers are switched very easily according to their demands.

According to the business development manager of DGW, this competitive advantage is sustainable at least in the short term. The reason is that the chain organization (see paragraph 4.1.5) and this customer intimacy level needs a long process to be created. However, in the long term,

countries in East Europe, like Poland, Ukraine etc. can constitute a serious threat to the Dutch organic and conventional meat sector. Their production and labor costs are much lower compared to West Europe and hence if companies in that acquire also management and marketing skills they could out-compete DGW and other west European companies.

4.1.2 Value creation strategy

The value creation strategies sought by DGW for pork is differentiation. The latter is achieved through many ways. First of all, the products and their production are different from conventional meat. Indeed, the utilization of OGM-free certified feed, larger area per animal, higher animal welfare standards and in general a more sustainable production results in a higher quality meat. Other means of differentiation for DGW is marketing. In particular, price and channels vary from conventional pork meat. Prices can reach even the double of the conventional for the same cut, especially in the ready-to-cook products.

Regarding channels and their choice DGW positions itself differently to reach easily its customers and to communicate to them the uniqueness of the products. Butchers and special franchise shops are used; moreover, when products are sold in retailers, the brand BIO⁺ (figure 4.1) have been established in order to be recognized as different.



Figure 4.1 BIO+ brand

4.1.3 Carcass valorization process and markets

DGW deals with all the carcass components since it owns slaughterhouses and also processing facilities. However, not all the carcass components are processed by DGW.

Regarding meat parts, this company is positioned in the organic meat market, therefore selecting and targeting niche markets. End-consumer products and industrial meat are the two main streams for DGW, with the former being much more profitable. Indeed, quoting the business development manager of DGW: *we would like to produce as much as consumer products as possible. So we try to sell consumer products instead of parts. Sometimes we can earn more from technical parts markets, but this market is more day to day focus, while the consumer market is more organized by long term relationship... That's why we decide to focus on the consumer parts.*

For end-consumer products, the main markets are retailers in Western Europe (Holland, Germany and UK), butchers and franchise shops in the Netherlands. Concerning industrial meat the main customers are German processors which transform these raw materials in processed meat (as

sausages, hams etc.) or end-consumer products as well. The strategic consumers of DGW are wealthy, young people concerned with environmental and animal welfare issues. In particular their focus is on the West European countries and especially in the urban and suburban areas.

Concerning edible plucks, DGW tries to valorize these products as organic as well to obtain a price premium. However, this bonus never reaches the 40-50% level as for meat products but it is assessable in around 10%. The main markets for edible plucks are end customers (reached through retailers, butchers, franchise shops) and processing companies. These are mostly situated in the Netherlands and in Germany. However, also companies from other West European countries are involved (especially France).

The largest part of non-edible plucks instead is sold under the conventional streams, for pet food. Only a minimum part can still get a premium price for being organic. This situation is even worse for heads, paws and bones. These carcass components are entirely sold through the conventional channels, because to date no market exists in which these products can be valorized as organic. This is in contrast with the goal of DGW to valorize the entire pig as organic. On the other hand, this is also the only chance the company has to still make some profit out of these components.

The main reason why non edible plucks and other by products are not entirely valorized as organic is their quantity level, which is still quite low to develop a real separate market for them. Citing the interviewed business development manager: *if we (DGW) slaughter let's say 3000 pigs per week then the volume is higher and so it's easier to develop a market. But if you work with 1400 pigs per week, it is 300 pigs a day. So if you look at the quantities of those small parts which are produced every day, then we work with containers which are not even half filled. The cost of logistics and operations of separating are too high, but as soon as we can work with full containers then it will be an interesting market for us.*

4.1.4 Operations competitive priorities

The main competitive priorities in DGW are quality and flexibility, which have been mentioned also as reliability towards customers during the interview.

Quality is guaranteed by the peculiar primary production and by a thorough processing benchmarking; indeed, return rates and complaints for the delivered products are very low. Flexibility is also a relevant competitive priority for DGW. Both range and response flexibility are high; this can be essentially related to the excellent coordination of the chain and to the long term relationship with customers pursued by this company. This flexibility level allows DGW also to receive and manage effectively tailored orders. Indeed, negative cases regarding wrong qualities or quantities have been only rarely experienced.

Costs of production are higher than conventional but still very effective compared to other companies dealing with organic meat; this is favored by the relationship with VION which provides technology, innovation and competences. Productivity level is rather good but it could be further improved.

4.1.5 Organization of the Dutch organic chain

The governance structure of organic meat chain in Holland is highly organized and harmonized. The Dutch organic pork chain, coordinated and regulated by DGW, has a simple but nonetheless effective structure. Skal Association is the only organization in The Netherlands able to certify firms which can then enter the organic market. Then, DGW establishes with these farms long term relationships in the form of written closed contracts.

By signing these closed contracts farmers agree to supply pigs to the DGW and to abide by the decisions of the Forum. This is crucial organ for the coordination of the chain. It consists of 5 representatives, 2 from DGW and 3 from VBV (Vereniging van Biologische Varkenshouders, in English Association of Organic Pig Farmers). The Forum group meets every month and discusses issues regarding supply, quantity, prices and marketing. Revenues and their repartition among chain actors are also discussed and this point is very interesting since it can lead to more benefits especially for farmers. The created value is indeed shared among all participants and does not remain to the slaughterhouses and processors exclusively.

4.1.6 Key observations Case 1 - DGW

DGW is a slaughtering and processing company based in Groenlo, The Netherlands. Its core business is the production and commercialization of organic pork and beef. Pigs are supplied by 55 organic farms resulting in about 1400 slaughtering per week.

The sources of competitive advantage for DGW are the uniqueness and the quality of the product and reliability towards customers. The former derives essentially from the peculiarity of organic production (larger square area per animal, no antibiotics, etc.). Reliability towards customers is related to flexibility and the high coordination level of the pork chain. Then, the value creation strategy pursued by DGW can be classified as differentiation strategy.

This approach affects marketing and operations strategies. Being active in the organic market, DGW targets niche markets through a selective specialization approach. Since the main objective of niche marketing is to satisfy and retain customers, quality and flexibility (both range and response) are the most relevant operations priorities for DGW.

The continuous research of markets for carcass components has led to the following markets and channels for pigs slaughtered and processed by DGW: end consumer products are sold through retailers mainly in Holland, Germany and UK; industrial meat and edible plucks are sold mainly to German processors; non edible plucks as conventional products to pet feed industry; head, paws and bones are sold to Asian market as conventional meat products as well.

DGW coordinates and regulates the Dutch organic pork chain. Long term written contracts are established with farmers and a discussion organ (the so-called Forum) has been created in order to more equally share the value among the chain actors. This organization degree enlarges DGW's flexibility and product quality at a chain level, thereby strengthening its value creation strategy in the pork industry.

4.2 Consorzio del Prosciutto di Parma

The Consorzio del Prosciutto di Parma is a consortium of hams processing companies active in the “Pianura Padana” region, in the North of Italy. Its core business is the production and sales of the “Prosciutto di Parma”, an Italian specialty product made from pigs’ hams.

The consortium coordinates and manages the activity of about 164 small processing companies producing the hams. The other actors in the chain comprise about 5.500 specialized farms and 120 slaughterhouses adding up to a production of about 10 millions hams per year. In the Prosciutto di Parma chain are employed more than 3000 people, constituting one of the most relevant agricultural industries of the country.

The Consorzio has been created voluntarily by the ham processing companies and its mission is to defend and protect the image and the quality of the product; another main activity of the consortium is to spread and distribute the Prosciutto di Parma worldwide (Consorzio del Prosciutto di Parma, 2010). The brand used to market Parma ham is a crown with five spikes, the so called Corona Ducale shown in figure 4.2.

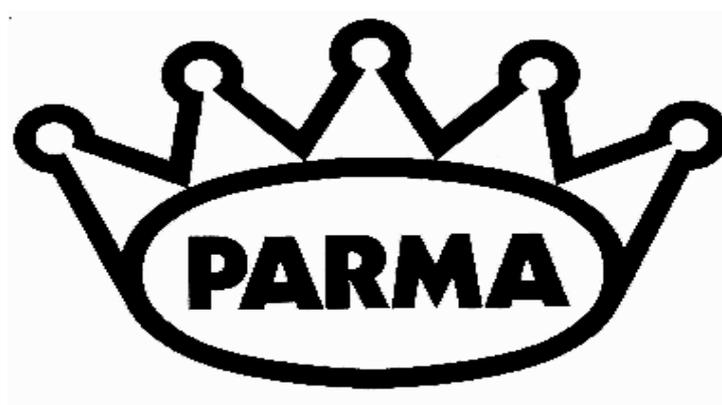


Fig 4.2 The Corona Ducale, Prosciutto di Parma brand

4.2.1 Competitive advantage

The competitive position of Parma ham is guaranteed by its uniqueness. This is mainly the result of two issues: its superior quality and its image, which constitute the bases of competitive advantage.

The superior quality derives essentially by the type of production and its tight linkage with the territory. The production of Parma ham is very special and peculiar. First of all, to produce Parma ham pigs have to reach 145 kg at about 9 months of age whereas usual hams are produced from pigs slaughtered at 4-5 months at a weight of 90 kg. Thereafter, hams are removed from the carcass and the real ham production takes place in the so called “prosciuttifici” (ham-makers companies), with a special recipe handed down by centuries by the “maestri prosciuttai” (ham-makers masters). The entire production of Parma ham comprises 10 stages and it takes about 12 months. It follows the natural and original way of producing hams. Salt is the only admitted additive whereas the utilization of nitrates and other preservatives is prohibited.

This specialty product has very strict linkage with the local territory. To produce pigs for the Parma ham, farmers must breed and raise only a certain type of local pig races (Italian traditional races or the Italian strains of Large White Landrace and Duroc), must be located in certain areas (only 10 Italian regions) and animals must be fed with a specific diet (based essentially on maize, barley and milk serum which is the main by-product of the other biggest food product of the Pianura Padana, the Parmigiano Reggiano). Moreover, pigs must be slaughtered and processed only in a specific area in the neighborhood of Parma (Fig. 4.3). This linkage with the territory has been witnessed by the acknowledgment of DOP brand by the EU in 1996, which was one of the first recognition ever.

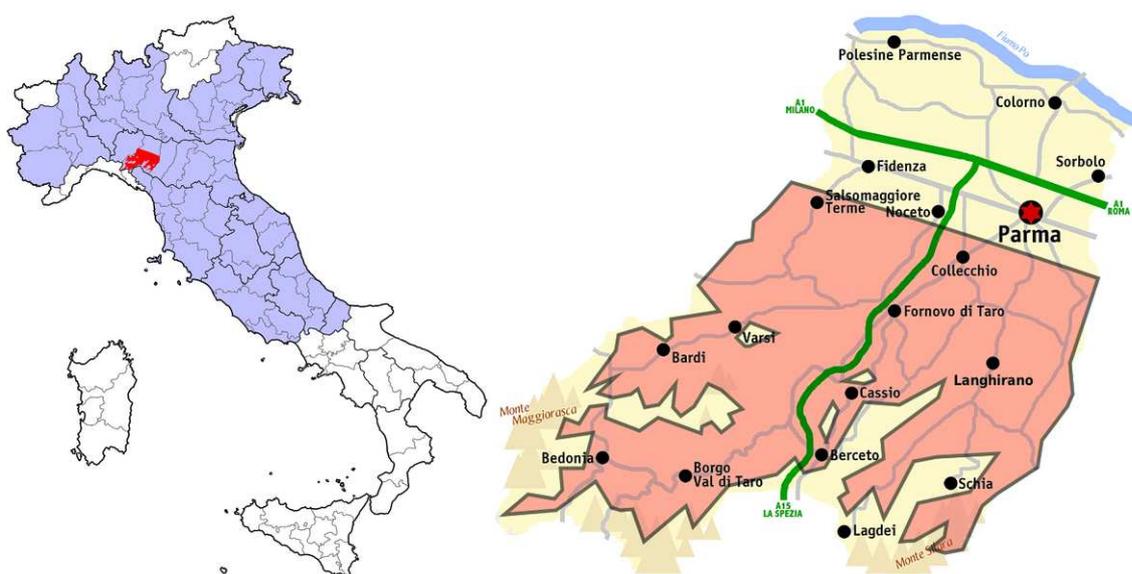


Fig. 4.3 Italian areas in which pigs for Parma ham can be raised (left, in purple) and slaughtered (right, in red)

4.2.2 Value creation strategy

As mentioned in the previous section, the main strategy through which Il Consorzio Del Prosciutto di Parma is seeking its competitive position is differentiation. This comes basically from a specialized production line, the tight linkage with the local area and a distinctive image towards customers. However, the focus of the consortium is on one specific product, the Parma ham. Hence, referring to Porter's (1985) model in chapter 2, the value creation strategy implemented by Il Consorzio del Prosciutto di Parma can be identified as Focus Differentiation.

4.2.3 Carcass valorization process and markets

The consortium is situated at a later stage than slaughterhouses along the pork chain. Thus, the firms belonging to the consortium are not responsible for the slaughtering process.

Companies belonging to the consortium usually buy only a specific product category from the slaughterhouses, the hams. Only in few occasions the entire carcasses or other products categories

are purchased. Therefore, in this paragraph the focus of the carcass valorization process and markets is essentially on the hams.

Referring to section 2.2.2 and in particular to figure 2.4, where various market targeting approaches have been described, the Consorzio pursues mainly a production specialization strategy. Indeed, the focus is on one particular product, the Prosciutto di Parma, in few markets.

The main market for Parma ham is the home market. More than 80% of sales takes place indeed in Italy. The remaining 20% of the sales are spread among other markets. The most important non-Italian markets are: France, Germany, UK, USA, Canada and Korea. According to the vice director of the Consorzio the most appealing markets for the future will be Australia and China.

Funding is the main limitation in targeting and entering new markets for Parma ham. Although, Italian government and the EU are regularly supporting this chain, funds are not sufficient to set a proper strategy to enter new growing markets (mainly Australia, China and Middle East as mentioned earlier) and it affects the marketing strategy of the consortium.

When purchased, the rest of meat components of the carcass are conveyed to other processing companies where other processed meat products are produced (salami, sausages, capicollo etc.). Valorization campaigns have been launched especially in a local setting to try to valorize processed meat products derived from pigs belonging to the Parma ham chain. However, they yielded negative results and despite the special type of products no bonus can be achieved. The same holds for edible plucks like liver, kidneys etc.

Non edible components of the carcasses are not taken in consideration at all by ham processing companies. They are sold individually by slaughterhouses as raw materials for other industries, as the feed industry. Hence, no real marketing strategy or valorization strategy is implemented for these components which are treated as waste. Moreover, no market development is planned. The same situation accounts for head, paws and the rest of the carcass.

4.2.4 Operations competitive priorities

Operations are a key issue for Parma ham production. As mentioned above, the uniqueness of the product derives by its unique production line.

The main focus of operations for Parma hams is on quality and the respect of the original manufacturing recipe. This makes the processing of Parma hams very specialized and high quality standards are reached. This quality level is highly appreciated by customers and is at the base of competitive advantage which will be detailed later.

On the other hand this specialization affects the costs of production which are rather high, especially when compared to competitors.

Since the manufacturing is so specialized and so regulated, companies' flexibility is extremely low. Only one specific product is generated and this reduces considerably the range flexibility. Moreover, the production line is rather fixed and it encounters the response flexibility. 10 stages and 12 months are required to generate the end product and no exception can be made. For example, in this period, due also the world crisis, the offer is exceeding market demand leading to the accumulation of Parma hams available. Consequently, prices and revenues are decreasing for the companies of the consortium. This situation can be perceived as one of the most relevant bottleneck concerning Il Consorzio del Prosciutto di Parma.

4.2.5 Organization of the Prosciutto di Parma chain

The Consortium is responsible for marketing and sales activities for the Parma Ham. The entire revenues are shared among the processing companies; however, these are rather low especially when compared to the revenues of the large distribution which earns more than 50% of the earnings. The chain has no further coordination organ. Relationships among actors in the chain are regulated by written contracts. In particular, processing companies of the consortium stipulate contacts with slaughterhouses, which are then responsible for the pig supply from farmers. Hence, no coordination organ or group has been established to further regulate the chain alignment. Then, farmers are not able to discuss supply, prices and revenues and this is a weakness for the entire chain scope.

4.2.6 Key observations case 2 – Consorzio del Prosciutto di Parma

Il Consorzio del Prosciutto di Parma is a consortium of 164 specialized hams processing companies active in the “Pianura Padana” region, in the North of Italy. Its core business is the production and sales of the “Prosciutto di Parma”, an Italian specialty product made from pigs’ hams. The other actors in the chain comprise about 5.500 specialized farms and 120 slaughterhouses adding up to a production of about 10 millions hams per year.

Parma ham competitive advantage resides in its superior quality and its image. Quality is achieved through a specialized production which is strictly related to the local territory. This relationship has been awarded of the DOP brand by EU in 1996. Then, since the main focus of the organization is only on one product, the Consorzio seeks a focus differentiation strategy to compete in the market.

In relation with this strategy, niche marketing is adopted to valorize Parma ham. The main market targeting approach is product specialization, in which the same product is sold to different markets. Operations are also affected by this value strategy; hence, only quality is perceived as the main operations priority. Conversely, flexibility is really low and the overall organization appears rather fixed; this issues pose a serious challenge for companies and the chain.

Parma hams are mostly sold in the home market, whereas sales in the foreign markets add up only to about 20% of the total. Industrial meat and edible plucks are rarely purchased and then they are conveyed to the Italian processing industries. However, no real valorization strategy or campaign is implemented for these product categories. Non edible plucks and head, paws and bones are considered exclusively as by-products by the Consorzio and therefore are not purchased by the companies.

The chain organization of Parma ham is standardized. Relationships of processing companies with slaughterhouses are regulated by commercial contracts. However, no further alignment of the chain is observable. Indeed, there is no central organ of coordination and this poses a relevant bottleneck to farmers which are not able to re-discuss prices and catch the extra value generated in the chain.

4.3 Chapter Summary

This chapter presented the cases which have been analyzed in this research project, namely DGW and Il Consorzio del Prosciutto di Parma. DGW pursues a differentiation strategy. Consorzio instead seeks a focus differentiation strategy since the focus of the companies is only on one end product, the Parma ham. The sources of DGW's competitive advantage are the uniqueness of the product and reliability. DGW targets niche markets through a selective specialization approach and quality and flexibility are its most relevant operations priorities. DGW coordinates and regulates the Dutch organic pork chain. This organization degree enlarges DGW's flexibility and product quality at a chain level. The Consorzio del Prosciutto di Parma targets market through a product specialization approach. Its main competitive priority is quality. Then, high levels of reputation and customer intimacy are achieved in the markets. However, the business appears rigid and inflexible. The chain has no central coordination organ and the organizational structure is standardized. Then, revenues are not shared among other actors in the chain.

The key observations concerning the cases have been further summarized in the table below.

Table 4.1 Summary of the results from the analyzed companies

	De Groene Weg	Consorzio Del Prosciutto di Parma
Value creation strategy	Differentiation	Focus Differentiation
Main markets:		
End consumer products	Retailers in The Netherlands, Germany, UK	Retailers mainly in Italy
Industrial meat	Processing firms in Germany, UK	Processing firms mainly in Italy
Edible Plucks	Processing firms in The Netherlands, Germany, UK	Processing firms mainly in Italy
Non edible Plucks	Sister companies (Vion) and feed industry in The Netherlands	-
Head, paws and bones	Asian markets	-
Marketing strategy	Selective specialization	Product specialization
Operations priorities	Quality, Flexibility	Quality
Chain Organization	Centrally coordinated by DGW	Standardized (governance by contracts)

5 Results Analysis

In this chapter the results of the interview with the cases representatives will be analyzed. In particular, at this stage of the report, the following research questions will be answered:

- Which value creation strategies are implemented in practice among value chains in EU context?
- What are the advantages of a certain value creation strategy on pig carcass valorization?
- What are the bottlenecks of a certain value creation strategy on pig carcass valorization?

The first section outlines the carcass valorization process implemented by slaughtering and processing companies active in the pork market which have taken part to this project. Then, attention will be paid to the analysis of marketing strategy, operation priorities and finally to the overall chain coordination.

5.1 Carcass valorization process

DGW owns slaughterhouses and processing companies; then it deals with all carcass categories. On the other hand, Il Consorzio del Prosciutto di Parma is situated in a later stage along the pork chain and its main activity is processing hams. However, the main centre of attention for both companies is the production and sales of end-consumer products. Then, this product category can be regarded as the most profitable one for companies in the pork market.

Industrial meat products and edible plucks are the second source of revenues for the analyzed companies. These categories of components still bear some of the extra value derived from the typical production. They can be still perceived as “different” from conventional leading to a bonus price. However, this bonus is not as high as for end consumer products. Non edible plucks and heads, paws and bones are even more difficult to valorize and they are mostly sold as conventional. This represents probably the biggest bottleneck for differentiation strategies: while the entire carcass of the pig can be considered as bearing extra value, only some components are sold as specialty products.

Since the main difficulty is valorizing the non meat parts, this challenge appears stronger for DGW or in general for companies dealing with all the carcass components.

This problem is related to the production level. Companies seeking differentiation strategies aim at niche markets, thereby having a limited output level. Then, for companies would not be profitable to develop new markets for these products, as in the DGW case.

Hence, only when production levels achieve a certain threshold, the valorization of these products can become profitable. A solution can be provided by opportunities laying in new markets. Demand for high quality and organic meat is steadily growing in some world areas despite the economic crisis. Many developing countries like China, Taiwan, Korea and EAU are quickly increasing their consumption of specialty meat products. In line with this, also concerns for the environment and animal welfare issues are rising worldwide. Then, targeting these new markets can represent a valid chance to enhance meat production. As a side effect, adequate quantity levels for non edible plucks

and heads, paws and bones could be reached and then appropriate marketing development strategies could be set also for this so far “unvalorized” carcass components.

5.2 Market choice and strategy

Finding a niche market is essential for companies which deal with specialty products (Kotler and Keller, 2006). A niche is a narrowly defined customer group seeking a distinctive mix of benefits (Kotler and Keller, 2006). In line with this, the two analyzed companies both pursue a niche marketing approach to valorize at best their meat products. The characteristics of the target customers are similar for DGW and Il Consorzio del Prosciutto di Parma. Both firms aim at reaching young or middle age consumers, who are cultured, wealthy and who care for taste and quality of what they eat. DGW narrows further down its target customers, aiming at those who are also concerned with animal welfare, sustainability of production and environmental issues. These targeted consumers are mainly living in the urban and sub-urban areas of the countries in which the companies are active.

Conversely, the analyzed companies follow different strategies regarding market targeting approaches. As pointed out in the previous chapter the main market targeting approach pursued by il Consorzio Del Prosciutto di Parma is Product Specialization (Kotler and Keller, 2006; Fig. 5.2). By following this strategy the product becomes the leader and the benchmark for similar products in the market. On the other hand, the main downside of this approach derives from the product specialization itself. The main challenges are the high level of dependency on the product sales and vulnerability to the action of competitors (Kotler and Keller, 2006). The latter threat can be perceived low or medium for Parma ham. The high product quality and its image guarantee a strong position for Il Consorzio del prosciutto di Parma against competitors. On the other hand, shifts in the markets due to external factors may pose a serious problem for sales of a quality product as Parma Ham. For example, the current worldwide economic crisis is limiting the budget of consumers for specialty products and this cause a clear shrink in the market for Parma ham.

The targeting market approach of DGW can be defined as selective specialization (Kotler and Keller, 2006; Fig. 5.2). This strategy offers the advantage of spreading the company’s risk among many products. For example, when a competitor is attacking a certain market, then the other products in other markets are not threatened by this action. Furthermore, the company can exploit this breadth and utilize these markets as the base from where counterattack the competitor. Main downside of this approach is that targeting and entering more markets is more costly. Moreover, it is more complicated to build a strong image and reputation level in all the different markets the company has targeted. Consequently, competitors may be more willing to set up attacking strategies.

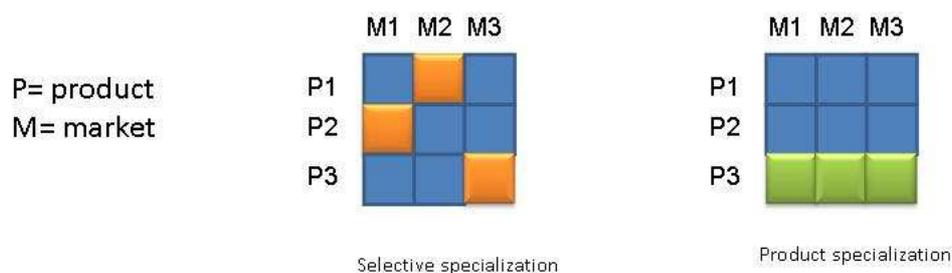


Figure 5.2 Target markets approaches followed by analyzed companies

5.3 Operations priorities

Competitive priorities are the outcome of well designed business processes and enable the firm to satisfy consumer requirements (Vonderembse and White, 1996). The choice of competitive priorities is related to the competitive strategy pursued by the company and it leads to the outperformance of competitors operating in the same industry and markets.

DGW and Il Consorzio del Prosciutto di Parma both deal with specialty products. Consequently, their customers have high quality expectations which justifies the premium they are willing to pay. Therefore, the main competitive priority of the analyzed companies is quality. Quality scores equally high in its two dimensions, high performance and consistency for both companies. These firms reach this quality level through a special primary production. In addition, the slaughtering and the processing of the carcass are continuously monitored and benchmarked. This gives on time information about the quality of the products and can prevent undesired failures. Failures in quality can be very detrimental since can undermine the image and reputation of companies, which are relevant sources of competitive advantage in niche markets.

Time and cost are perceived more as threshold capabilities than competitive priorities through which companies can outperform each other. The production of specialty products entails also higher production costs. Consumers are willing to pay a premium for specialty products. Hence, the analyzed companies do not have the pressure to reduce costs to outcompete competitors as in other value creation strategies. Then, regarding this competitive priority, the main focus is on trying to limit costs to not overcome the threshold price above which customers are not willing to pay any premium. Concerning time, this is also a difficult priority where to outcompete competitors. The meat industry is very dynamic. Sales of batches are done on a weekly or daily basis. The products need to be delivered quickly since meat is a perishable product. Fresh meat is indeed more valuable than frozen one and consequently meat products are moved as fast as possible.

Flexibility is probably the main distinction point between DGW and Il Consorzio del Prosciutto di Parma. DGW pays much attention on range and response flexibility. This situation is favored by two issues. First of all, the relationship of DGW with its mother company VION, provides innovative and technological solutions which improve products and mix flexibility. Secondly, the high level of cooperation among the pork chain (see next paragraph), allows a perfect coordination of the chain streams. By so doing, markets can be constantly monitored and eventual shifts can be

identified. Moreover, new products can be produced and new market opportunities can be more easily grasped.

Il Consorzio del Prosciutto di Parma instead appears rather fixed and its flexibility scores low on all dimensions. This extreme rigidity is a direct consequence of the hyper-specialization process for Parma ham. Despite the advantages that this unique processing offers, this inflexibility leads to several relevant bottlenecks. First of all, the entire chain becomes too dependant on one product and therefore very vulnerable. For instance, an animal disease at farm level could compromise the entire chain; the same holds for a shrinkage in the end market. Hence, in emergency cases the company and the chain are condemned to suffer major losses. Secondly, the setups of marketing strategies and campaigns are also encountered, especially in the long term. Considering that the entire production process of Parma ham requires 12 months, it becomes then very difficult to sense the markets and their trends. Moreover, the purchase quantity of raw materials becomes extremely challenging. Companies belonging to the consortium have to buy hams which will be delivered to the market one year later. This makes it extremely complicated to predict a correct value. Then, periods of hyper or hypo production can be expected. Finally, also innovation in the product and the production are also restricted. Product innovation is limited only to the last phase and there is no possibility to create new products based on the production.

5.4 Chain organization

The organization level of the chain is very important for the success of a value creation strategy. While slaughterhouses and processing companies are the main shapers of the value creation strategy, it holds for all the actors in the chain.

A central organ of coordination of the chain is extremely advantageous, as shown in the DGW case. It increases the flexibility and the synergy level of the entire chain, which acts more as a unique entity than a set of single organizations. In addition, this organizational setup favors also a more equal repartition of the created value through the chain. Indeed, contracts are periodically discussed and revenues for farmers are adjusted according to the value in the market. Farmers can then exploit at a maximum level their specialization and their professionalism.

On the other hand, this system is proved to work in a small, local setting (60 farms). Moreover, it is applied in a context where specialty products are produced. Then, the feasibility of such a system in larger scenario or in other value creation strategies is questionable. In bigger countries, as Italy or France, the setup of such a coordination could be limited by logistics issues and regional differences (costs of production, consumer preferences etc.). In addition, in cost efficiency strategy settings, the coordination of the actors could be restricted by the economic pressure. Indeed, it would be difficult to harmonize prices and quantities of supply when the main priority is cost reduction.

5.5 Opportunities for the cases

As pointed out earlier in this chapter the most relevant bottleneck for differentiation strategies is the valorization of non meat parts. In the analyzed cases, this difficulty has been perceived higher for DGW. A solution to this bottleneck can be provided by opportunities laying in new markets. Demand for high quality and organic meat is steadily growing in some world areas despite the economic crisis. Many developing countries like China, Taiwan, Korea and EAU are quickly increasing their consumption of specialty meat products. In line with this, also concerns for the environment and animal welfare are rising worldwide. Then, targeting these new markets can represent a valid chance to enhance meat production. As a side effect, adequate quantity levels for non edible plucks and head, paws and bones could be reached and then appropriate marketing development strategies for these products could be set.

The analysis of the cases revealed that a focus differentiation strategy shows more challenges than a differentiation strategy. Then, a good opportunity for il Consorzio del prosciutto di Parma is broadening its product offering set. As shown in the theoretical framework in chapter 2, this change would affect also marketing and operations activities. The market targeting approach would switch to selective specialization and range flexibility will increase. Furthermore, the carcass components valorization process would benefit and new channels towards customers could be opened. In this way, the highlighted challenges for this value creation strategy could be reduced or overcome while at the same time the product focus would not be displaced.

Since the production of pigs and hams is regulated by the EU regulations, introduction of new products could take place at the end of the production line or concerning other unvalued carcass components. Due to a prolonged fattening period, pork meat produced in the Parma ham chain is fatter than conventional pork. This characteristic matches the preferences of Asian consumers, who prefer a more marbled and fatter meat. Then, the Consorzio could start to set up operations to produce fresh meat products and convey these to Eastern countries.

Another possibility is to broaden the end-product presentation offering. Since demand for convenience is increasing, the Consorzio could focus on this market segment with pre-sliced ham in association with other Italian specialty products. Parmigiano Reggiano, Mozzarella di Bufala and other Italian premium cheeses target the same strategic customers as Parma ham; hence, the association of Parma ham with these products could strengthen their image of quality and at the same time fulfill consumer demand for convenience.

5.6 Chapter summary

This chapter has described the analysis of the value creation strategies derived from the cases.

The most profitable carcass category for companies seeking differentiation strategies is end-consumer products. However, the remaining parts of the carcass are not fully valorized and value is lost. This bottleneck is perceived stronger in differentiation strategies because in the focus differentiation strategy only few carcass components are processed.

In the differentiation strategy, a selective market targeting strategy is pursued; conversely in the focus differentiation strategy a product specialization strategy is sought. The latter makes the

company too dependent on one product and therefore the entire chain becomes vulnerable. Other main challenge in the focus differentiation strategy is the lack of innovation and flexibility within the company and the chain.

In general, a focus differentiation strategy shows more challenges than a differentiation one. Then, the main opportunity for companies resides in broadening their product offerings thereby increasing flexibility and opening new channels.

6 Conclusions

This chapter presents the conclusions and discussion of this research project. Besides, recommendations and suggestions for further research are discussed.

6.1 Conclusion

This section will answer the central research question:

Which value creation strategies are pursued in pork chain to valorize pigs' carcasses and what are their main advantages and challenges?

In order to be able to answer the central research question the research went through the following stages:

- Identification of value creation strategies applied to pork chains
- The identification of strengths and challenges for each value creation strategy
- The discussion of opportunities for each value creation strategy

For clarity of exposition, in the next sections first a description of the value creation strategies and their identification will be given. Afterwards, each strategy will be further detailed and their advantages and disadvantages will be highlighted.

6.1.1 Value creation strategies

Pork is the most eaten meat all over the world. In last decades trends like globalization, health and sustainability issues further increased the variety and the variability in the demand for pork meat. Consequently, in this sector, pig slaughterhouses and processing companies in cooperation with other actors in the pork chains are seeking different value creation strategies to fulfill this large demand.

Under a company perspective, the value creation concept is strictly related to its competitive advantage and consequently to its competitive strategy. Hence, the strategy through which companies create value can be referred to the strategy they use to out compete competitors. Porter's model classifies competitive priorities in 4 types according to a 2x2 matrix, in which the source of competitive advantage and the company's competitive scope constitute the axes. The four strategies are: differentiation, cost leadership, focus differentiation and cost differentiation. So far, from the analysis of the companies which were studied in this research, two value creation strategies have been evaluated: differentiation and focus differentiation.

6.1.2 Differentiation Strategy

A differentiation strategy is a strategy in which the company differentiates itself from competitors through several aspects like: product, marketing, channels etc. In this research project a company active in the organic pork segment has been analyzed.

Companies pursuing this strategy generate the highest revenues by selling end consumer meat products. This derives from the large market demand and willingness to pay for these specialty products. Industrial meat and edible plucks are also sold as organic. However, these products generate less revenue and sometimes are not fully valorized, due to shifts in the markets. Therefore, the strategy of these firms is to deliver as much as products to end consumers.

Non edible plucks and the rest of the carcass like head, paws and bones instead cannot be valorized as special products since there are no existing markets which recognize the added value of these products. These categories are then sold under the conventional market losing value.

The main cause for this is the quantity level of these components which is not large enough to develop new markets. This is also the most relevant challenge for the carcass valorization process for a differentiating company.

On the other hand, a differentiation strategy allows companies to choose specific target customers and to tailor their product offerings for them. By so doing, high levels of customer intimacy and customer loyalty can be achieved. In turn, these result in an excellent coordination among actors of the chain. Consequently, farmers are more involved in the overall chain strategy and revenues, resulting in high sustainability for the chain in the long term.

Opportunities for slaughterhouses and processing companies pursuing this strategy lay especially in entering new markets. To this regard, developing countries in the Middle and Far East appear very attractive.

6.1.3 Focus Differentiation Strategy

A focus differentiation strategy is a strategy where the company differentiates itself from competitor through production, marketing, channels etc and in which the focus is on a certain product. In this research project an Italian company focusing on the production and marketing of the Prosciutto di Parma has been studied.

In the pork industry companies pursuing this strategy generates the largest revenues by selling the specific product they are focusing on. Other meat components, industrial meat and edible plucks have a certain valorizing market. Still, this process is not as profitable as for the sale of the focus product. As for companies pursuing a holistic differentiation strategy, also in this case there are no markets in which categories as non edible plucks, heads, paws and bones can be sold as specialty products. Their destiny is to be sold under the conventional markets losing the extra value gained through production; this scenario is in contrast with the overall strategy and is the biggest challenge regarding the valorization of the pig carcass.

Other relevant bottlenecks for this value creation strategy resides in too high level of dependency of companies on the product they are focusing on and a low level of flexibility and innovation. Since, the production is very specialized, it is very challenging for firms to introduce innovation and changes in products and production.

On the other hand, by focus differentiation companies can achieve a very advantageous position in the market, strong reputation and customer loyalty. Opportunities for slaughterhouses and processing firms pursuing this strategy are in further developing the product offering, especially in the convenience segment, and in targeting new markets. To this regard, Asian countries appear very promising opportunities. In this way, the too high dependency degree on the main product could be overcome.

6.2 Discussion

Concerning this research, several limitations need to be mentioned. The case study approach is limited by the number of cases which have been analyzed. The initial idea was to evaluate three or four companies pursuing different value creation strategies. However, one case (e.g. Vion Food Group) could not be included in this research. Besides, only one person per company could be interviewed. This is essentially due to time constraints for this research, which lasted only 4 months. The author tried to overcome this challenge by means of in-depth interviews. Moreover, by consulting other sources and data and by reviewing periodically the research process with experts, the triangulation concept has been continuously applied.

Geographical limitations also affected the validity of this research. Cases were mainly active in Europe and in particular in the Netherlands and in Italy. Therefore, no information has been retrieved on the topic of this report in other European and non European countries.

Time and geographical limitation all result in limitation for the generalization of the findings of this project. First of all, to derive a generalization from three cases is difficult because more examples should be analyzed to come up with a reliable outcome. Therefore, as already stated in the methodology chapter, generalizing the results of this research has been judged to be out of the scope of the project.

6.3 Recommendations

Despite the fact that giving recommendations goes beyond the scope of this research, from the study and analysis of slaughterhouses and processing companies active in the pork industry several suggestions have been popped up during the project.

Firstly, it is recommendable for the Consorzio del Prosciutto di Parma and for companies seeking a Focus differentiation strategy to extend the product set. In this way, bottlenecks as high dependence degree on the focus product and inflexibility can be reduced

Secondly, demand for convenience and more healthy and sustainable food is steadily increasing despite the world financial crisis which occurred recently. Therefore it appears recommendable for slaughterhouses, processing companies and in general for chains active in the pork industry to further focus on these specific market segments.

Finally, it appears convenient for slaughterhouses and processing companies to try to establish a central organ of coordination which can improve chain alignment. By so doing, relevant shifts in the market can be partially avoided and proper reactions can be implemented. Moreover, the overall flexibility of the chain and actors involved in the primary production would benefit. Then, the sustainability of the chain within the overall strategy is perceived higher.

6.4 Further research

This research project can be classified as an explorative type of research. To date, on the topic of carcass valorization there are no specific studies. Therefore, further research is needed in this field in order to improve knowledge and understanding on the carcass valorization process in pork chains. Suggestions for further research consist of studying a larger amount of cases. By studying more cases the analysis of the various value creation strategies and their relative strengths and challenges will be more detailed and reliable.

Since one of the main findings of this report is the presence of promising markets for pork in developing countries, further research is needed to evaluate in detail these opportunities and their fit with the analyzed cases. Moreover, other studies should be carried out regarding the evaluation of size and attractiveness of the market segment of convenience in pork meat.

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Interviews

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Hoste R., 2010. Personal communication during a meeting on 09-04-2010. LEI Research Institute, Wageningen, The Netherlands

Appendices

Appendix 1: categorization of secondary data used in the project

Table 7.1 Classification of secondary data used for this research project

Authors	Year	Source Type	Title	Topic used
Bonoma T.V. and Shapiro B.P.	1983	Handbook	Segmenting the industrial market	B2B marketing
Kotler P. and Keller K.L.	2006	Handbook	Marketing Management	Market segmentation and targeting
Krajewski L. J. and Ritzman L. P.	1999	Handbook	Operations Management	Operations priorities
Johnson et al.	2006	Handbook	Exploring Corporate Strategy	Competitive advantage
Lehman R. and Winer S.	2007	Handbook	Analysis for marketing planning	Market segmentation and targeting
Porter M. E.	1980	Handbook	Competitive strategy	Value chain creation strategies
Porter M. E.	1985	Handbook	Competitive advantage	Value chain and value creation strategies
Slack N. and Lewis M.	2002	Handbook	Operations Strategy	Operations priorities and flexibility
Vonderembse M.A. and White G.P.	1996	Handbook	Operations Management	Operations management
Wognum et al.	2008	Scientific article	Towards a multi-dimensional framework for characterizing and comparing pork chains	Pork supply chains
USDA	1999	Report	Generic HACCP Model for Pork Slaughter	Pigs slaughter process

Table 7.2 Classification of internet sources used during this report

Authors	Website	Day of Visit	Info gathered
Business Dictionary	www.businessdictionary.com	13/04/2010	Definition of concepts
Danish Crown	www.danishcrown.com	14/06/2010	Pig Carcass components and their markets
Easy Marketing Strategy	www.easy-marketing-strategies.com	10/05/2010	Definition of concepts
FAOSTAT	faostat.fao.org	07/04/2010	Statistics on pork consumption
Gira Meat Club	www.pve.nl	15/04/2010	Statistics on pork consumption
Quick MBA	www.quickmba.com	13/04/2010	Definition of concepts
Vion Food Group	www.vionfood.com	08/04/2010	Pig Carcass components and their markets

Appendix 2 : Informed consent and structure of the interviews

Verification

Interviewer: Alessandro Bisesti

Interviewee:

Contact person of the company:

Position in the company:

Introduction

This interview is part of the Minor Thesis in Management Studies for the achievement of the MSc program in Animal Science at Wageningen University, The Netherlands, of Alessandro Bisesti. The subject of the thesis is the evaluation of the pig carcass valorization process. The objective of this project is to gain insights into the pig carcass valorization processes implemented by slaughtering and processing companies in order to generate the largest value out of a pig carcass; in addition, the main challenges which companies are facing according to their value creation strategies will be then identified.

This interview will be undertaken in 3-4 firms active in pork meat industry in The Netherlands and in Italy. The scope of this interview is to evaluate how the pig carcass is managed and valorized in all its parts and to identify possible bottlenecks in this process relative to marketing and operations management issues.

The final results and analysis of this research will be available for the interviewees upon explicit request. The results should provide interesting insights regarding possibilities of valorizing pig carcasses and avoiding bottlenecks in the valorization process.

This interview will be audio-recorded under explicit consent of the interviewee. This interview should not contain any confidential question. However, if confidentiality issues arise, then the interviewee may feel free to not answer. The estimated time for the completion of the interview is about 30 minutes.

In order to gain insights into the pig carcasses valorization process, this interview has been structured in three sections:

Part A: Company profile

Part B: Markets identification and target

Part C: Operations and their management

The focus of this research is on the Dutch/European context

Thank you for participating in this research project!

Appendix 3: reporting of the interviews

Interview with Mr. Henk Gerbers (HG), business developer of De Groene Weg held on 5/6/2010

AB: As you have read this interview is valid for my minor thesis in Management Studies here at Wageningen University. The objective is to get insights into the carcass valorization process, taking place in various firms; in particular I will try to analyze 3-4 firms active in Holland and in Italy. The interview is structured in 3 main topics: company profile, marketing and market identification and operations management.

HG: It is special research for university or this is made for university?

AB: Yes, basically is made for university. It is not made for a company; but of course I will analyze 3-4 companies active in the meat industry: De Groene Weg is part of them..... I sent you already some questions. These are more a framework, especially for me. We are not going through exactly all of them. So, let's begin with the first question: What is the core business of your company?

HG: We are mainly active in the beef and pork organic meat sector. We are not active in the chicken meat. We consider ourselves chain director for the organic chain.

AB: Can you briefly describe the mission of your company?

HG: we want to be a leading company of production and marketing in organic beef and pork in the NW Europe.

AB: which company organization does your company have? Is it owned by Vion right?

HG: yes, it is 100% owned by Vion. It is our mother company, but our company is one of the few companies which has a certain image in the market, so we operate with our suppliers and customers as De groene Weg. Externally we are independent but internally we seek cooperation

AB: who are the suppliers of De Groene Weg?

HG: we have organic farms, 55 farms. Most of them are full time organic pig farmers, some of them they have also dairy farms. One or two have also regular farms, but actually the main stream is coming from specialized organic pig farming. And we have 1400 slaughtered pigs per week.

AB: yes, I read it was about 1300.

HG: yeah, we aim at 1400 per week, but currently we are a bit less.

AB: what about processes during slaughtering? Are they slaughtered in the conventional way and they are slaughtered through some special process?

HG: the pigs are slaughtered in VION slaughterhouses in Groenlo.

AB: so in an industrial way?

HG: what do you mean with Industrial?

AB: if it is slaughtered in an industrial slaughterhouse or managed by individual butchers.

HG: In Holland 99.9% of the animals, beef, pork, chicken are slaughtered in industrial slaughterhouse, both conventional and organic. They are only very few butchers which are slaughtering their own animals. Butchers don't do that because the regulations are strong and strict. It's also very expensive. That's why in

Holland most animals are slaughtered in industrial slaughterhouses. So, organic and conventional slaughtering are the same. The only regulations is that they need to be separated in time and space.

AB: So, you only need to separate batches?

HG: yeah, yeah.

AB: but the processes are then exactly the same.

HG: completely the same as conventional.

AB: what about the competitive position of your company....

HG: We have our vision to be a leading company. If you look at the market there are only two companies with a leading position. Friland in DK and De Groene Weg in NL. Maybe Friland is a little bit bigger. So, we have both a leading position. In Dk is different because of supply chain, management, so I think we are a little bit ahead of them.

AB: so u sort of share leading position with Friland. So, your company is focusing on more end products ?

HG: if you look at the European Market. 800000 pigs slaughtered. If u look the market in Germany and Denmark they are responsible for 50% of that market. Germany is the biggest producer, then Denmark and Holland. Friland has 90% of the Danish market. DGW has over 90% of the Dutch. Germany is the biggest market but very fragmented with very small companies. So if u look at Friland and DGW this company have both 10% of the European Market.

AB: So the demand in germany which is 50% of the total is covered by production in germany or...

HG: no, we export a lot to Germany. The consumption in Europe is more in Germany 35-40% in general. So Holland as well as Denmark are in Germany.

AB: But, I mean, your company is not focusing then on a particular product as for example they fo with Prosciutto di Parma...

HG: no no, we focus on consumer products and half, how to say,

AB: Half carcass.

HG: yes. We do both, end products and components, or raw materials for further processing.

AB: so basically, your company, doing organic meat is differentiating from other companies, like Vion, doing conventional meat. That's the source of your added value.

HG: yeah, we focus on sustainable value creation. We look for long term relationship with customers in Europe but, if necessary, worldwide. Our focus is to give the entire pig an organic value. Our focus is not cost leader, but cost effective. What you see, while we have bigger scale, we are quite competitive in the rest of Europe.

AB: So among the organic markets, is leading in cost effectiveness.

HG: yes, if you look at retailers like Aldi, Tesco etc. they want suppliers which can fulfill their demands. They have so many shops that only few suppliers are able to supply them. That's our unique point: that we can supply large volume and the quality we get fulfill the customers. We are very reliable.

AB: so that's your source of competitive advantage.

HG: yes, quality and reliability. Always the same quality and always reliable. If for example they ask for 1500 we deliver 1500, not 1300 or 1700 pigs. What you see also in the conventional markets is that when you order something you are not always sure of what you get and how much you get, you can get sometimes more and sometimes less, so it's very important to be reliable.

AB: how do u evaluate your competitive advantage? You think that for other companies is difficult to catch up with you? Can they reach it?

HG: ehm, on the short term no; but in the long run other companies can do it, especially in east Europe and they can be a threat. East European production is probably in the long run the most important threat.

AB: that's essentially because of lower costs.

HG: yes because if you look at what are the costs of organic pig farming they are essentially feed and labor. So they have the space for grass for feed and labor there is much cheaper. Only what you see is that they don't have the capital and the management and marketing is not there.

AB: what about the value you create? What is more or less the range of added value you get?

HG: well, if you look at the prices, we pay 2.80 euro per kg. Conventional is about 1.50 euro per kg. This is what Vion pays. That's a big difference. Also the costs in the farm are quite high. Robert Hoste also worked on that. He did research about cost price in farms, comparing different countries. Holland and Denmark have the same cost price. German and English cost price were higher than Dutch. But if you look at Germany and Uk they have different structure, much smaller farms. So, in average cost price differs among country.

AB: so at what price do you sell the meat?

HG: We have the price for pig and then u have the consumer price, what the retail pay and that's the price we sell to retailers. But it's difficult to say, because for minced meat is 9.50 but for pork chops or filet it is different and these prices which we offer to retailers are confidential and they differ from retailers.

AB: so, what is the price difference among organic and conventional pig meat?

HG: well, JFK did studies on this, then you see the average price for pork is about 6 euro and for organic is the double, is about 12-12.50 euro per kg.

AB: ok, so how is this added value divided among the chain...because you pay the farmers more...

HG: we have a special way to work together with our farmers. We have contracts made one by one but we have a contract also with VBV (Vereniging van Biologische Varkenshouder), that's a kind of collective organization, a farmer unin you can say. We speak once a month with them about price and yeah, what price we have to pay next period. Basically we try to pay a stable prize, so in organic on average the price among the chain is more stable but that's because also of the organization we have. The other issue, ofcourse we have the market, we look at our pown profitability and we look at the production at farm level. It's like a triangle, and the market is one of the angles, leading by far. But if the costs on farm level are so high that farmers can't survive, then is necessary that we know that, so sometimes it's necessary that we share part of the losses at farm level or the other way around. Market is 80% leading, while we and farmer 10% both.

AB: so it is by far more stable than conventional where prices are more fluctuating, even day by day or week by week.

HG: yes and I show you a graph about this.....you see the conventional has more fluctuations, while the price for DGW are more stable. Our prices are also more stable than Friland, because of the organization. If the price levels of feed for example go too high.

AB: well, let's now talk a bit about the marketing part. How does your company position itself in the market. Basically is only organic.

HG Well, we position ourselves in the organic market. We deliver also on demand. We focus on customer intimacy. We talk to our customers, so we know them quite well, we know what their needs are and we can serve them quite well. It's kinda of customer intimacy, both in industrial area and customer area which gives the best results in the long run.

AB: can you give a sort of profile of your customers? Which are you targeting?

HG: our customers?

AB: yes, the ones you are targeting.

HG: well, we have our own franchise formula with butchers, but that's very small. Let's say 5%. We focus on big retail in NL, Germany and UK. We consider also food service as customer markets, but this is more in development. And then we need also complementary customers to valorize the pig. Almost 1/3 is going to sister companies within Vion to make consumer's products, could be also german or English sister company. If u look at the importance of industrial export in Germany, that's our biggest market: almost 50 % of our products go to German processing companies which make wurstel etc. Italy is also a customer; we sell quite a lot of hams to Italy, 2% of our volume. France is a growing market. But our philosophy is that the fresh prepacked market is the core, not the biggest one in volume, and what we cannot sell in this market we sell as industrial meat, mainly export.

AB: well , here as you can see, I divided the end products in categories, so to have more structure.

HG: yes. How do you defined processed meat?

AB: yeah, meat which chilled, stored using preservatives, other spices, like salami, ham.

HG: so, how do you consider a packed pork chop?

AB: well, I consider more as a fresh meat piece. i mean processed meat I intend more like sausages, ham, where you can not identify the piece of meat anymore.

HG: well if you look at our brochure, we consider this as consumer products, especially when is pre-packed. Instead for example if you take the shoulder that's a technical, industrial part. Here is more about technical industrial parts; instead filet, pork chops we consider consumer products.

AB: So, you think is better distinguish in technical/industrial parts and consumer products?

HG: well, you can divide in industrial meat and call the processed meat and the pre-packed meat as consumer products and markets. If you compare Friland and DGW, in this part Friland is much bigger, but in the consumer products DGW is more developed.

AB: so let's say about the technical meat. Which are the main markets?

HG: Germany, Italy, Denmark and France. And these are mainly processing companies.

AB: Did these market change among last years?

HG: the demand is slowly growing, but what you see in last few years is that the production of pigs increased more the demand, so the profitability in Europe and in Holland for organic pig farming was low. So the farmers everywhere lost money. But lately demand is increasing. In organic farming when you have one pig too much the price goes immediately down. Better to have one pig too less than one too much. I make always the comparison with cars. When you have to wait for a car you choose, you don't care about

the money but only if you can get it quicker; as soon as you have your car in your showroom, then the buyer cares only about getting it for the lowest possible price. So that's what we are talking about.

AB: how do you evaluate this choice regarding markets? Do you think there are also other markets which should be targeted and reached?

HG: Organic is one hand global, so we have to look at trends worldwide. Our focus is mainly Europe. In Europe is also slowly growing. It's a question if we look in the short or long run. Do consumers accept meat produced far away. It's a risk for Dutch because over 50% of the meat is exported far away. On the other hand, if we can't produce professional organic meat in Holland for an affordable price, so more consumers can choose from conventional to organic meat, then it's a chance for the Dutch industry.

AB: don't you think that consumers consuming organic pigs are concerned about the origin of the meat then? You think they are willing to buy meat not coming from their own region or land?

HG: yes it is an issue, yes. But I think that animal welfare is more leading than the land of origin, so as welfare during growing. They want to know where the pig are raised but for them is of less importance. Another issue is that retailers decide the supply, so if we with our logistics and our management can fulfill the retailer's demand, this meat can be much more preferred by supermarket, then small scale. If we speak about butchers, the origin can be of more importance. But if you look at where is sold most organic meat sold then the supermarkets I believe will become the main stream distribution. In UK, in Switzerland and in Scandinavia, you see grow over 80% the volume. Special stores grown by 20% and they are served by local suppliers.

AB: do you identify any weak point in this marketing strategy?

HG: Green-washing, green-washing of conventional. That's about communication of conventional, making the image more green without changing the system. Albert Heijn will introduce this meat, maybe you've read about it, supported by the Dutch Animal Welfare organization; and there u see that conventional pig have 0.7 square meters, in organic farming pigs have about 3-3.5 square meters, but now this new segments this in-between segments have 1.0 square meter. So, from 0.7 to 1.0 is 30% more, it's quite a lot especially when compared to organic, it's still less than the half. But the consumer price of this in-between segment, is of course almost the same as conventional while the one for organic is the double. So, that's what I think what is the main risk: how consumers will react on the entrance of this in between segment. Price difference among conventional and organic is also another weak point. The price difference sometimes is too big and we should try to make it smaller.

AB: what is revenues you can get by selling technical/industrial parts?

HG: well, we would like to produce as much as consumer products as possible. So we try to sell consumer products instead of parts. Sometimes we can earn more from technical parts markets, but this market is more day focus, while the consumer market is more organized by long term relationship. So the switching cost of changing customers are quite high. That's why we decide to focus on the consumer parts.

AB: but in general industrial parts and consumer products are the main sources of your revenues.

HG: well..ehm...that's difficult to say...but in general, yes. It is also difficult for our competitors to enter at those markets. For example one third of our market is consumer products, maybe just a little more than 30%.

AB: and so the main markets for consumer products are mainly retailers in NL, UK and Germany?

HG: yes, they are growing markets.

AB: so you think in future there will be even a more tight connection with these markets?

HG: if you look at the food consumption of the first quarter of this year, the growth is about 0% in supermarkets. If you look at organic this is +10%; if you look at organic meat is about +15%; so, food is stable, organic is growing and organic meat within organic is growing even faster. And if you look at our brand we have private labels. We do our private label BIO+ and we do our own franchise DE GROENE WEG this is about + 33% and BIO+ is + 12%. Yes, so organic is growing market so you have to be in this market and try to beat the competitor.

AB: yes, so there is still space to exploit.

HG: yes yes.

AB: ok, we already touched upon most of other questions. I was wondering about edible plucks....

HG: so by products.

AB: yes, like kidneys, lungs, livers which can be sold still in the human food industry.

HG: yeah, they are mostly sold as organic, so we get also organic price.

AB: so still as double as like the meat?

HG: not as double, but still more. But in the non eatable then sometimes we sell them also as organic. For example they are used for organic sweets, and we are their suppliers. If you look at dog feed we can supply also organic parts...for dog feed, cat food how do you call it?

AB: Pet food.

HG: yes! Pet food! Yes for example we can sell them for the organic valorization of these by products. But not all the products.

AB: and with these you can still get a premium?

HG: yeah.

AB: so, you get a premium but not like for meat which is double the prize; so u can still valorize this by products. Is it right?

HG: yeah, that's our goal: to valorize all our pig as organic. And in the by-products we can still make progress. In the meat parts all parts are sold as organic. Only few days or weeks happens that what we cannot sell as organic we sell as conventional, but that's really an expensive hobby.

AB: so regarding edible plucks the main markets are still retailers?

HG: no we sell them mainly to the industrial meat processors where they sell them for the salami and other production.

AB: How much can you usually get out of them? Can you fully channel all your production to your suppliers and you have remaining?

HG: we have 1400 each week: it means 1400 heads, 1400 livers...so yeah, we try to sell them every week. If we have a customer we needs more then we put them in the freezer and then we serve the customers with all the products we have saved earlier.

AB: so you still them as organic?

HG: the edible is organic, the non edible is only partly organic and the rest is regular.

AB: So in the non edible plucks the ones you can still sell as organic are those ones for gelatin and for pet food?

HG: yes, exactly.

AB: do you think there are still some markets which should be targeted about edible and non edible plucks?

HG: yes there are opportunities yes. But for volume of 1400 pigs per week then the cost effectiveness of this flow is quite tricky; because actually the market for organic pork meat is growing. So if we slaughter let's say 3000 pigs per week then the volume is higher and so it's easier to develop a market. But if you work with 1400 pigs per week, means divided by five, is 300 pigs a day. So if you look at the quantities of those small parts which are produced every day, then we work with containers which are not even half filled. The cost of logistics and operations of separating are too high, but as soon as we can work with full containers then it will be an interesting market for us.

AB: so what is then the range of revenues you can get out of this, 5-10%?

HG: we are not earning money out of this. It's only because of principle. If you have an organic pig then you want to valorize as organic. So the revenues are marginal.

AB: so about head, paws, bones?

HG: mostly they are sold as conventional. But there are also opportunities, for product development.

AB: yes, because there is still market in east Europe and Asia.

HG: yes, the paws are going to Korea for instance or elsewhere, but then sold as conventional.

AB: so to fully exploit them, you should develop a market for organic also there.

HG: currently the volume is too small and it would cost a lot to develop this, and if you look at the meat part, then is much more profitable to focus and develop rather these markets. That's the reason why we do not focus and heads, paws.

AB: so in the end, plucks, head, and paws are just a marginal business and you don't have really a strategy to exploit them and their added value as organic.

HG: as soon as the market is ready to offer a premium, we would also do that. But the market is currently not willing to give a premium for these parts.

AB: Do you think there will be some chances that this will happen in future?

HG: it is very difficult to say. We hope so. But I think the hope is bigger than the reality.

AB: but bones could also be used in the feed industry.

HG: yes it was, but now is not allowed anymore. Now is used in the electricity industry as material for burning, like wood.

AB: but for example in countries where is still allowed to use bones in the feed industry you could then use them or not, and target these markets?

HG: yes that's correct but what you see for example in England..... is that more aware consumers are against bones. That's rather emotionally because technically it doesn't change anything. Maybe it is even

better because one of the principles of organic farming is the circle, the circuit...to be like a closed system as the cradle to cradle. If you use something you should then be able to re use it again.

AB: regarding marketing in general, what you think are the main challenges in valorizing all components of the pig?

HG: our priority is to grow because there are opportunities, but we need more professionalization at the farming site and among all the chain, currently we are far ahead, but reducing cost at farming site. Improving also on more uses of the organic pig are the main issues. Castration is also an issue and in general animal and human health in general. Upscaling will also improve the situation because it would create more opportunities in markets. And also maatwerken we say in Dutch, maintenance and intimacy Innovation in customers is also an issue, yeah product management. For example we are working on package degradability and we will use that in a few years.

AB: so to increase customer satisfaction and then loyalty, let's say.

HG: yeah. Convenience in organic is also an opportunity.

AB: actually I think is not exploited convenience in organic. For example, for conventional products convenience is almost overstressed currently but not for organic.

HG: yeah Van wijk is also doing consumer research for LEI here. She did three years ago: convenience and organic, a combination for the future. And then, for some people this is not just a combination but it is the formula for the future. The organic sector is way ahead about sustainability but on the other hand is also very traditional regarding innovations. In the beginning, 30 years ago when they started they were against traditional, but now they are becoming so big that they need an own view, an own vision about the future, and that's more difficult than being against someone like they were doing before.

AB: so let's move to the last part of the interview, otherwise is getting to long and I don't want to let you stay here the entire afternoon. Regarding operations, what are the main priorities you seek? I mean like quality, cost, time, flexibility?

HG: Yeah, reliability is the main issue; in particular regarding quality and quantity.

AB: reliability regarding quantity, you mean the ability to deliver the quantity they ask for?

HG; yeah, and selection is also an issue. If they need big hams, we have technique which can improve our customer satisfaction.

AB: regarding the productivity level of your company?

HG: that's high. The competences within Vion organization are quite high, so we can learn and we have the advantage. Our technology is at state of the art.

AB: so you can exploit competences from Vion and exploit them also for the organic?

HG: yes, conventional can learn from organic but also organic can learn from conventional. That's two way.

AB: regarding margin for increasing productivity what do you think?

HG: that's more up-scaling of the entire sector, maybe gives not more margins but with higher volumes we can make organic products more reachable for more consumers.

AB: what about quality level?

HG: our customers are quite satisfied. Our customers pay more for our products than the ones of our competitors.

AB: regarding all categories?

HG: yes.

AB: of course with a special focus on industrial meat and end consumer products?

HG: yes, for by products there is no difference.

AB: did you ever experience complaints or troubles regarding quality?

HG: yes, but I don't know the figures, but we have our quality department which is managing complaints.

AB: but you think your quality level is then reasonable?

HG: we benchmark ourselves, also with our conventional sisters and we do better. We have to do better, because the price is higher and then also the expectation is higher. If you pay double price then your quality must be perfect.

AB: what about products delivery? What's your strategy? It is just in time, or you produce your products and then you wait?

HG: well the strategy is to find customers for all the sort of pigs slaughtered every day. So in that way the carcasses are leading. So we need to find a customer for each part every day of every week and if can't find a customer for that part in a week we then downgrade it to conventional. We do not speculate with organic meat. If we don't have enough demand we look for other customers, new markets so we can sell it as a whole. If we don't succeed then we downgrade it to conventional.

AB: and this is happening also regarding by products?

HG: yes, especially with the eatable ones. The non eatables are mostly sold already as conventional.

AB: how do you evaluate this strategy? Or do you think other strategy could be more efficient, like storing?

HG: yes we tried to store them, but we have had bad experience with it so we don't do that anymore. Speculation is not according to organic production. We want to have long term relationship.

AB: regarding flexibility you already mentioned that is very important for your company. You think it comes also from the organization of the chain you have?

HG: we try to develop our markets together. Currently market demand is not exceeding production because we have long term relationship, so we are less vulnerable than our competitors which are focusing on day to day markets.

AB: just last few questions. In relation to the overall strategy of your company how would you evaluate your operations? You think should be improved?

HG: our strategy is customer intimacy. I think that's a good strategy. Growth is possible, both in current markets like Netherlands and Germany and in new markets like France which is growing. Opportunities for growth are also the far markets and I mean especially those around big cities like Moscow, St. Petersburg, Shanghai...let's say all big cities with 10 million inhabitants and they have many rich people and so they could buy organic meat.

AB: But still that is concerned with upscaling and volumes.

HG: yes, maybe also Dubai could be an interesting market.

AB: concerning the products categories which I mentioned before which one do you think pose most challenges in being valorized?

HG: first is nose to tail valorization and second is consumer products. This is priority one. With nose to tail valorization I mean that our priority is that all the pig should be valorized as organic. If only half is valorized then we are not scaling up

AB: yes, but what is the most challenging?

HG: currently the middles and in particular the filets.

AB: and what is the reason?

HG: currently because of the pound. Because we sell a lot of organic bacon to UK. So the crisis of the pound is decreasing the purchase of organic meat. We have also a lot of competition from Danish which are dumping a lot of organic bacon to Uk. We hope that the British market can recover so also the market for organic bacon will recover.

AB: so if you don't sell them as organic, then you sell these filets as conventional?

HG: yes.

AB: any final suggestions?

Hg: I think that's a matter of finding new products for customers or find new markets, for example especially in Asia.

AB: and regarding plucks which one is the most challenging to valorize?

HG: well, that's not an issue. It's too early. We don't have volumes.

AB: so indeed is still just considered as by product and is not completely valorized. Ok, I think I got all the information I needed. I would like to thank you once more for your collaboration to the research project.

HG: you are welcome.