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Structure, Conduct and Performance in the South African Potato Processing Industry

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Abstract

The South African Potato industry was deregulated in the early 1990's, leading to changes in market structure. The adjustment in market structure leads to changes in production and marketing practices, including contracting and pricing strategies for processing firms within the industry. The purpose of this paper is to investigate the current status in the potato processing industry, based on market structure, conduct and performance. The objective is to qualitatively measure the driving forces within the industry, and how these factors influence performance of the industry as a whole. The research method was based on the structure-conduct-performance paradigm, giving a better understanding of the potato processing industry and the driving forces, relating to future growth. A short case study of the Australian potato processing industry, which finds itself in a similar position as South Africa, reveals that increasing global competition in the form of low cost importers, are hampering competitiveness and profitability, along with rising production costs. It was found that the South African potato processing industry has a relatively high concentration, which means efficiency is lacking as market shares is not distributed effectively. It was further evident that a lack of trust between processors and producers is a source of concern for processors.

1. Introduction

South Africa has a well developed and self sufficient fresh produce and processing industry, of which potatoes are the single most important vegetable product within South Africa with a total production of 1,853,000 tons in 2008 (DOA, 2008). The estimated gross value for the 2008 potato crop was R2 billion (Statistics SA, 2008). The potato industry has operated under free market conditions for many years. As a result, the deregulation process of agricultural marketing during the 1990's did not have an influential impact on potato marketing, as opposed to grain commodity boards which deregulated completely.

The South African potato crop is marketed as seed potatoes, table potatoes and potatoes earmarked for processing (Potatoes SA, 2008). There is an approximate 1700 independent potato producers in South Africa, of which 400 consist of seed growers. It is also estimated that about half this number of producers consists of emerging small-scale

farmers (DOA, 2008). The South African potato processing industry has shown considerable growth over the past ten years. At the moment the processing industry uses 380 000 tons of fresh potatoes of which 320 000 tons are contracted from producers and the balance purchased from the fresh produce markets. The industry now represents 19% of the total potato crop as seen in Figure 1. The growth in the potato processing industry can be ascribed to several factors such as the expansion of the fast food industry in South Africa, higher average income of the South African population, increasing number of state of the art processing facilities and the rapid rate of urbanization which increases demand for processed foods. Understanding and knowledge of the functioning of the potato processing industry is thus becoming increasingly important as its relevance is increasing in context of the potato industry and the fresh produce industry.

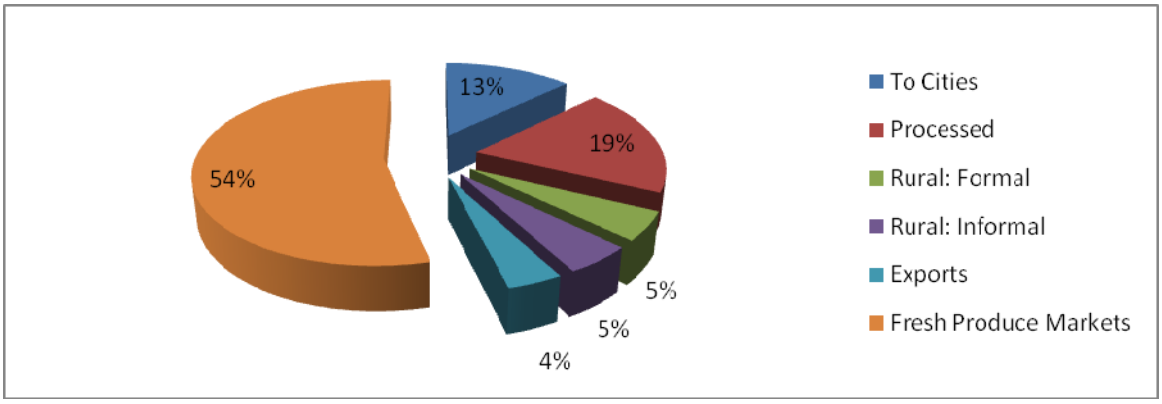

Figure 1: Destination of potatoes produced in South Africa

Source: Potatoes SA (2010)

Potatoes South Africa (PSA) currently uses Michael Porters generic strategies as tools to position the industry for robust growth. The aims of the strategies are to focus on local marketing, promotions and foreign market development. Sustainable growth is achieved through the increase in per capita consumption which ultimately transcends to benefit of the entire growth of the industry (Potatoes SA, 2008).

Evaluating the key drivers within the industry, is most effectively done by denoting an internal and external environmental analysis based on the South African Potato Value Chain. This analysis is known as the SWOT analysis, and observations noted will be

reinforced into a comprehensive study to underpin competitiveness and efficiency dynamics. Aside from viewing the vegetable industry from an institutional perspective, it will be analyzed using the *Structure-Conduct-Performance* (SCP) paradigm.

This approach was first used by Bain (1951) to account for inter- industry differences in profitability. The basic premise of the SPC is that **structure** (number of farmers and traders, number and composition of vegetable markets, quality and quantity of infrastructure support) affects **conduct** (production and marketing practices including pricing), and finally conduct affects **performance** (prices, quantities and profits). This procedure provides a good reference framework for research, because it allows a straightforward measure of market efficiency (Milagrosa, 2007).

2. Methodology

A questionnaire survey was conducted with the key potato processing role players during 2008. A Structure-Conduct-Performance (SCP) questionnaire was compiled, and focused on means of how key drivers could be identified which would allow the supply chain to function more efficiently. In theory the Structure-Conduct-Performance is a model used to link elements of market structure to business conduct and performance in industrial economies. A case study of the Australian processing potato industry, which is based on a strategic plan drawn up by the Australian Processing Potato Industry (APPI), will also be done. This will give an overview of what the situation in Australia is, and how it relates to the South African potato processing industry.

Firstly, it is important to scale the measurement of concentration, number of firms, firm size, etc. This will give a comprehensive overview of the industry layout with respect to Structure, Conduct and Performance. The following variables according to Vegsys (2003) are important to evaluate in a Structure-Conduct-Performance paradigm.

- **Structure Variables**
- **Conduct Variables**

- Number of firms
- Firm size
- Concentration ratio
- Economies of Scale
- Import penetration

- **Performance**
  - Input/Output
  - Trade growth
  - Internal Rate of return
  - Employment
  - Role of Regulation in the sector
  - Pricing
  - Research and innovation
  - Advertising
  - Anti- Competitive practices
  - Governance
  - Investment in the Industry

Identifying all the necessary variables is necessary to present a holistic view of the driving forces within the industry, by indicating how the variables interrelate and influence each other. In other words the structure-conduct-performance (SCP) model implies that as number of firms increase, the market concentration falls, which results in market power declining, and the end result is that price gets closer to marginal cost. Empirically, when comparing industries, it should be observed that industries with lower concentration have less market power.

3. Theory

The primary approach of examining market performance has been known as the structure-conduct-performance (SCP) paradigm, which postulates that certain market attributes (such as market concentration and barriers to entry) effect company profitability within the relevant market (Aleksandrova and Lubys, 2004).

There are two competing hypotheses in the SPC paradigm: the traditional “structure performance hypothesis” and “efficient structure hypothesis”. The Structure performance hypothesis holds that the degree of market concentration is inversely related to the degree of competition. This is because market concentration encourages firms in the industry to collude and therefore the more concentrated the market, the higher the degree of collusion will be, and the degree of competition will decline. This hypothesis will be

supported if market concentration has a positive impact on the performance of the firm (irrespective of the degree of efficiency of the firm).

The efficient structure hypothesis holds that the performance of the firm is positively related to its efficiency. This is because market concentration emerges from competition where low cost structure increases profits by reducing prices and expanding market share. As such, firms that are more efficient will have better performance. This hypothesis will be supported if firm's market efficiency has a positive impact on its performance (regardless of the degree of concentration in the market) (Kari, Jafaar, Allen and Couvillion, 2002).

According to the SPC model, the way in which firms are organized in the market structure tells a great deal about how they make decisions about conduct, this, in turn changes the level of efficiency and fairness in the market performance (Seperich et al., 1994).

Competitive markets facilitate allocative efficiency and provide incentives for efficient production and exhibit downward pressure on prices and costs. If not competitive, industries do not exhibit these benefits on society. It is thus important to evaluate competition within an industry. It is impossible to observe or measure competition directly – so proxies have to be used instead. One of the most commonly used proxies used is the level of concentration in an industry. The Structure-Conduct-Performance (SCP) paradigm states that the structure of an industry (or the degree of concentration) determines conduct (collusion and monopolistic pricing), which determines performance (abnormal profitability/rate of return). Structure thus refers to market structure, defined mainly by the concentration of market shares in the market. Conduct refers to the behavior of firms, whether competitive or collusive (Anonymous, 2006). Performance is associated with social efficiency, which is mainly defined by the extent of market power (greater market power - lower efficiency as firms tend to move away from marginal cost pricing). The interrelation between components as postulated by the SCP paradigm is indicated in Figure 2 (Aleksandrova & Lubys, 2004).

The paradigm was based on the following hypotheses:

i) Structure influences Conduct: Lower concentration (more firms with an equal share of power) means that firms will exhibit more competitive behavior.

ii) Conduct influences Performance: More competitive behavior means less market power which will lead to greater social efficiency (prices gets closer to marginal cost).

SCP Paradigm is thus basically used to determine the degree of competition in an industry by assessing the level of concentration in the industry to see how it affects performance (efficiency and profits) within the industry. Level of concentration is calculated by determining the amount of firms in the industry, as well as how the market power is shared between the firms. If we have six firms in the potato processing industry with two accounting for 80% of the gross output, while the other four shares the remaining 20%, it will be an example of a highly concentrated industry. Competition will thus be weak as the two dominant firms will be able to control price and output and depart from marginal cost pricing which is inefficient. According to the SCP Paradigm this highly concentrated industry will enjoy higher returns and possible monopoly profits through price collusion between firms.

Measurement of concentration

If firms are identical in terms of market shares, with *n* firms, each firm has *1/n* market share, thus concentration is inversely related to the number of firms. If firms though hold unequal market shares, the number of firms is not likely to capture concentration.

For example:

Industry I: *Two firms each with 50% market share.*

Industry II: *Three firms - one with 90% and the other two with 5% market share.*

Arguably, industry II is more concentrated in terms of distribution of market shares, though it has more firms than Industry I.

*The **Herfindahl index** is used to determine and compare concentration within industries. Suppose there are n firms in an industry. For each firm i, let qi be the output produced by firm i. Total output in the industry will be: q = q1 + q2 + ... + qn. The market share of each firm i is donated by Si = qi / q.*

Herfindahl index: $H = S1^2 + S2^2 + ... + Sn^2$

In the earlier example:

Industry I: *n = 2, S1 = S2 = 0.5, H = ¼ + ¼ = 0.5*

Industry II: *n = 3, S1 = 0.9, S2 = S3 = 0.05, H = (0.9)² + (0.05)² + (0.05)² = 0.815*

Thus the Herfindahl index proves that industry II is more concentrated, even though it appears that industry one with fewer firms is more concentrated. This indicate that concentration can not be calculated or predicted solely based on number of firms, but the distribution of market shares between them also have to be taken into account.

Measurement of market power

Market power is usually measured by the relative mark-up of price above marginal cost, called the Lerner index. If all firms have identical marginal cost of production then:

Lerner index: $L = (p - MC) / p$

If firms however have different MC of production, the Lerner index evaluates the weighted average of each firm's mark-up of price above marginal cost where the weight is the market share of each firm. If there are n firms and Si is the market share of firm i, MCi is the marginal cost of firm i, then:

Lerner index: $L = S1(p - MC1 / p) + S2(p - MC2 / p) + ... + Sn(p - MCn / p)$

The SCP Paradigm implies that differences in H explain differences in L. Market power is thus directly related to market concentration and the strength of their relationship are affected by the elasticity of demand. One problem that might exist is that the Lerner index requires information on marginal cost of production that is not readily observable

by outsiders. Investigators then use the weighted average of profit rates (Profit of firm i / Revenue of firm i) as a proxy for Lerner index.

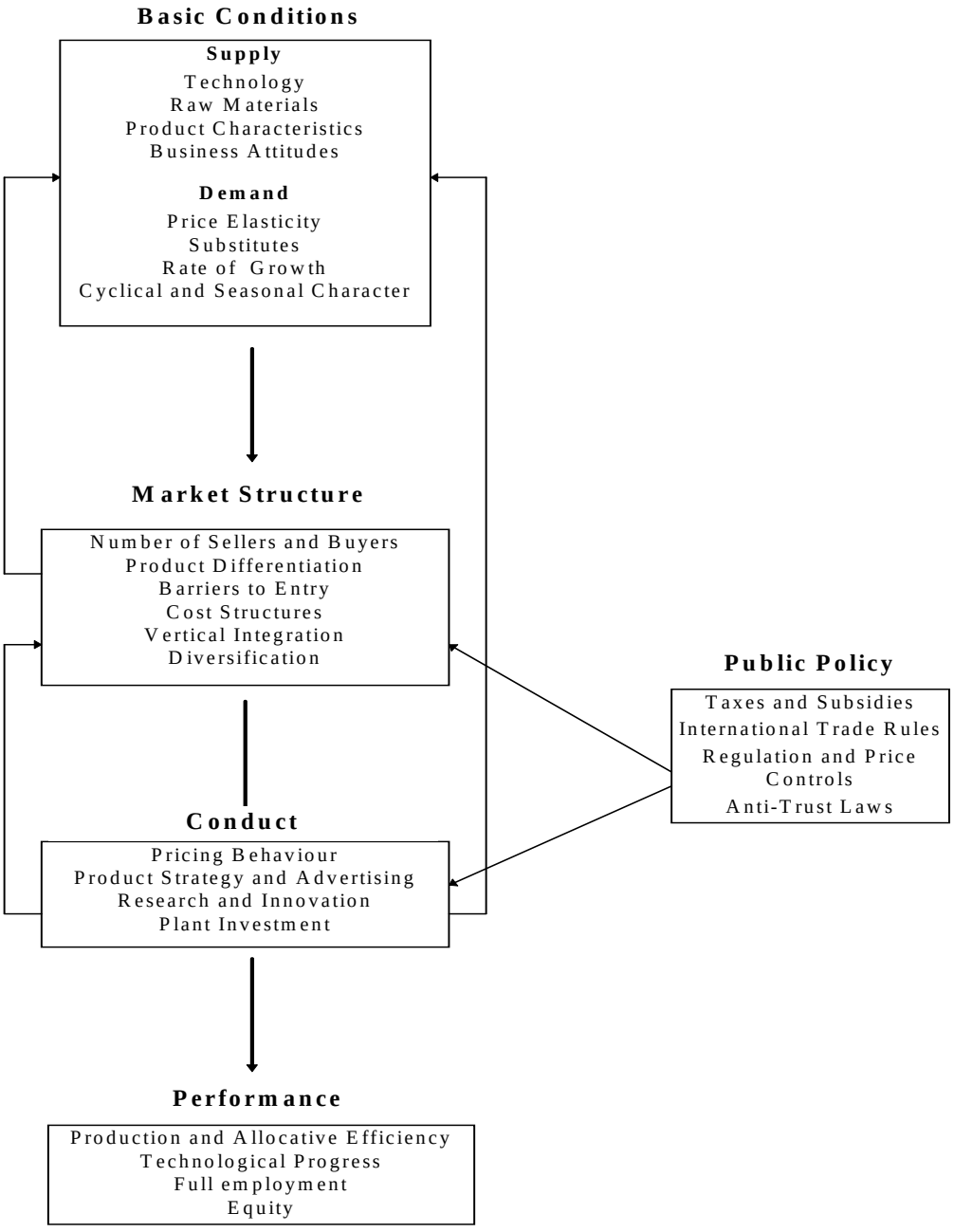

Figure 2: Illustration of SCP Paradigm

Source: Aleksandrova & Lubys (2004).

4. Results of Survey

The results obtained in this section are based on a questionnaire and individual survey of firms in the potato processing industry.

4.1 Structure

The per capita consumption of potatoes of 34 kg (2008) is about half of the USA and a third of Europe. The per capita consumption of processed potatoes in the UK is 52 kg while it is only 8 kg in South Africa. Table 1 illustrates that the processing industry, while not the biggest industry, dominates in the volumes procured through direct channels together with formal retail trade.

Table 1: The South African potato supply chain 2006: Structure and volume shares of different marketing channels (raw equivalents)*

Total Crop	⇒	Table Crop 88%[1]	⇒	National Fresh Produce Markets 51%[1] (58%[2])	⇒	Fresh – informal market 26%[1] (51%[3])
					⇒	Fresh – formal market 19%[1] (37%[3])
					⇒	Processing 2%[1] (5%[3])
					⇒	Exports 4%[1] (8%[3])
			⇒	Direct marketing channels 37%[1] (42%[2])	⇒	Processing 15%[1] (41%[4])
					⇒	Fresh – informal market (direct from rural areas) 2%[1] (4%[4])
					⇒	Trade (formal retail) 17%[1] (46%[4])
	⇒				⇒	Exports 3%[1] (8%[4])
		Seed crop 12%[1]			⇒	Seed certified 9%[1] (76%[5])
					⇒	Seed uncertified 3%[1] (24%[5])

[1] Share of total crop. [2] Share of table crop. [3] Share of sales volumes on National Fresh Produce Markets

[4] Share of volumes procured through direct channels (i.e. not through National Fresh Produce Markets)

[5] Share of seed crop

Source: Potatoes South Africa, 2008

According to the survey, amongst potato processors, the following results were obtained; consumer demand is seen as the main contributing factor for price formation, apposed to price of substitutes and availability of supply, while production cost pricing is the most prominent method of basing mark ups.

Concentration within both Frozen French Fries (FFF) processors and snacks processors suggest that there is one distinctive market leader within both sectors, namely McCains and Frito-Lays respectively. Companies that have market share in the Snacks Industry are Frito-Lays with 65% and Willards with 30%, while companies that have market share in the Frozen Fries Industry are McCains with 75%, Lamberts Bay Foods with 15% and Natures Choice 10%. Values of the HHI range from 0 - 10 000, with a value of smaller than 1000 indicating a perfectly competitive industry, 1000 – 1800 a monopolistic competitive or a light oligopolistic market, 1800 – 9999 a tight oligopolistic market and a value of 10 000 indicates a monopoly. It can be observed from Table 2 that both the crisps and frozen fries industries are tight oligopolistic industries, with the frozen fries industry having the highest HHI as expected with McCains dominating the market.

Table 2: Illustrates the breakdown of Processors within the South African Potato Industry and estimated HHI:

Processed Potato Products	**Crisps**	**Frozen Fries**	**French Fries**	**Canned Potatoes**	**Mixed Vegetables**
Number of Prominent Firms	6	3	5	2	3
Companies	Dowmont Foods	Lamberts Bay Canning Co	Dimpho Fresh Food	Langeberg Koop	Dimpho Food
	Frimax	McCains	Errol Veg	Giants Foods	Golden Harvest
	Kavalier Foods	Mine Corp	Mannic Chips		McCains
	L & C Messaris		Rooipoort Fresh Products		
	Poco Foods		Super Chip		
	Simba Quix				
HHI	5130	5950			

The greatest barriers to entry in the processing industry are as follows:

- Capital Requirements
- Economies of Scale
- Proprietary products and knowledge
- Access to raw material

Other factors not seen as important as the above factors includes patents, government regulation and brand identity. After processing companies were asked “Are there any reasons to exit the Processing industry?”, all of them answered with a resounding no, but mentioned factors like raw material costs and labour costs as influential threats. According to the survey the five most prominent issues processors have to deal with are:

1) Cost of raw material
2) Oil flavour and packaging
3) Utility costs, coal, electricity and gas
4) Labour
5) Low Profit margins with high sales volumes.

4.2 Conduct

No anticompetitive practices were noted within the industry. Future strategies concerning procurement with suppliers were noted as follows: Ensure continuous quality as the key objective for the industry, contracting directly with farmers, long term storage facilities and sales objectives. Key drivers within the industry were that raw materials make up 65% of total production costs, and that has a great effect on how the industry approaches its management expertise. Procurement patterns are done differently at each role player’s factory, with some doing procurement on a daily level, while others prefer weekly and monthly methods. These methods include:

- Direct contracting plays an important role in procurement: It ensures continued supply, while on the consumer side it ensures consumers demand is continuously satisfied. Specific cultivars are specified for processing which have specific quality attributes.

- Differentiation is done by firms through the use of various strategies, including offering quality, price and packaging strategies that are different from their competitors.

The following preferences were noted by the processors regarding procurement which includes:

- Contracted farmers who apply best agronomy practices
- Financially sound farmers
- Farmers that have a history of performance delivery

Quality plays an important role with respect to the grading of raw material for farmers. Snack Processors demand quality cultivars that have high solids and low fry defects, which have a good appearance, while frozen french fries processors demand cultivars that have high quality and brick like features for longer fries.

Quantity was seen as the most important requirement of business objectives after quality due to the low margins within the potato processing sector. Quantity is followed by ensuring enough of the right variety is attained and this is followed by time schedule, ensuring that enough products are stocked on the shelves packaging and handling of logistics.

One of the major reasons for contracting farmers is that processing companies can inform farmers about what cultivars the farmer should plant, as well traceability of raw material can also be monitored better, while scheduling supplies to the factory is also important. The problem with buying potatoes on the fresh produce market is that most of the cultivars do not meet the needs of processors, be it frozen french fries producer or snack producer. Therefore potato processors contract the supply of potatoes for processing and do not source from the fresh produce market.

Macro economic factors that had the most influence on the sustainability and growth of the business were noted in the following order:

1) Consumption patterns
2) Inflation
3) Interest rates
4) Exchange rate
5) Crime

On the other hand the micro economic factor that had the most influence on the sustainability and growth of the businesses was the ability to control the availability of supply and product quality. The question was raised that if the potato product price was largely determined by its nutritional value, what would be seen as the main substitute for potato products (Crisps), in terms of food types that contain high starch contents, e.g. products made from wheat, products made from rice or products made from maize. The processors suggest that processed rice goods remained the biggest threat for frozen french fries producers, while snack producers hinted that maize snacks were the greatest threat.

Questions based on how consumers react to increase in product price, revealed that “buy less of the good” was more prominent compared to consumers switching to other goods. Processors differentiate their offering by firstly distinguishing the quality, second the pricing of the product, followed by the packaging of the product. Processors defined their working relationship with suppliers as business like as apposed to agonistic or friendly. Quick service restaurants are the main buyers of the products of French Fries Producers (FFP) while wholesalers and supermarkets are the main buyers of crisps. Government and legislation have little influence on the business. The list of important factors that are passed down from processor to the farmer is as follows:

- What cultivars should be planted (preferences)
- What standards of excellence should be met with inspections
- Forecasting of supplies
- Quality standards
- Monthly pricing

4.3 Performance

French Fries Producers (FFP) see specialty products and battered chips as future areas of expected growth, while for snack processors, kettle chips and maize snacks as areas of future growth opportunities. The impacts of growth are determined by demand, offering, price and availability. Processed potato products is primarily supplied to retailers, where consumers buy it directly as seen from Figure 3, so one of the most important success factors for processors is to anticipate and adapt quickly to changing consumer needs.

The potato products of both the FFP as well as potato snacks contribute to low profit margins of the respective industries, compared to the other vegetable and meat offering, which the industries cater for. Determining the needs of processors was seen as the main expectation of the processing companies regarding Potato South Africa (PSA).

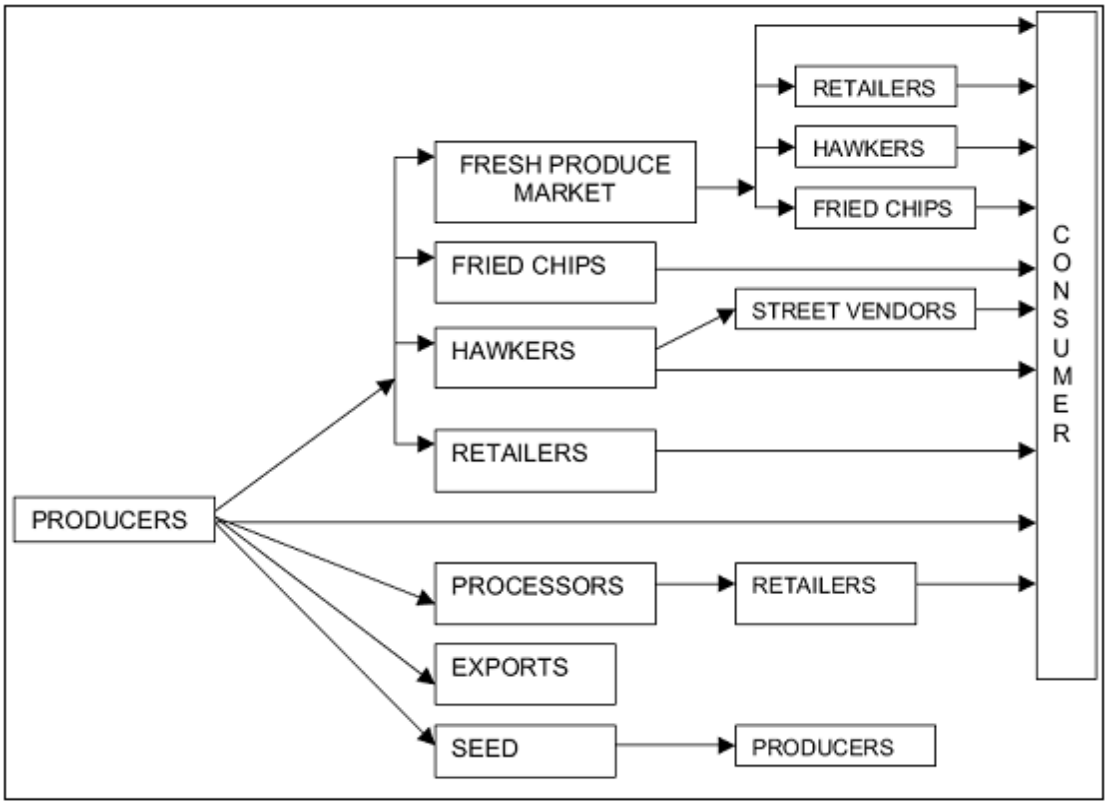

Figure 3: Marketing channels for table potatoes

Source: Potatoes SA (2008).

The main driving forces ensuring smooth operation within the potato processing industry includes the following:

- Farmers sign contracts with processing companies during planting time
- The farmer who produces table potatoes will only know his price on the day he ships his produce off to the markets
- Farmers do not need a packing shed, because the processing company collects the potatoes on the land at harvesting time

5. Situation in Australia

The development of an industry strategic plan is essential for the Australian processing potato industry, as it moves into a period of intense global competition, rising costs and declining world prices. The Potato Processing Industry SWOT Analysis of Australia is indicated in table 3, and is critical in order to understand the situation and to develop an effective strategic plan. Domestic consumption is declining with estimates of around 63 kilograms per person per annum, although it appears that the proportion of processed potatoes consumed is rising at the expense of fresh products, as is the case in South Africa.

The marketing function of the potato processing industry in Australia is predominantly driven by processing companies themselves. For the last 10 years, production volume has been slowly falling with rising production costs and major threats of low cost competition from other countries. The Australian industry is a relatively high cost producer selling to low cost, high value demanding consumer. Rising costs of production are impacting on Australia's competitiveness and profitability.

Australian supermarkets are moving to 30% private label products with many products sourced from overseas suppliers. The industry is at the crossroads of global competition and must make significant changes in order to remain viable in the long term. Industry costs are rising while returns to growers are declining, which means the industry must focus on increasing value chain productivity. The industry must improve collaboration through the value chain in order to significantly improve productivity (APPI, 2006).

Table 3: The Processing Potato Industry SWOT Analysis of Australia

Strengths	**Weaknesses**
• **Good people-experience, knowledge, skills** • **Great product- well known, good demand, high quality, established consumption habits** • **Relatively good infrastructure and facilities** • **Good growing environment for potatoes**	• **Reliance on old cultivars** • **Poor health image of potatoes and processed foods** • **Fragmented industry: Lack of leadership group** • **High costs and regulation relative to competitors** • **Poor collaboration and communication through the value chain**
Opportunities	**Threats**
• **New Technologies in production, processing, packaging, transport and IT** • **Consumer focus on convenience, health and emergence of functional foods** • **Creating Positive image for domestically grown products** • **Improved communication technology and access** • **Alignment with global supply chains**	• **Bio-security breach- disease incursion** • **Imported products from low cost competitors** • **Rising business costs, regulation and compliance** • **Consumer attitudes to processed products and GM foods** • **Consolidation of Global supply chains** • **Closure of Australian plants- change in investment**

Source: APPI, (2006).

6. Marketing Strategies for Increased Competitiveness

As consumer income has increased over the last few years, the preferences of consumers have become more nutrition and health orientated. Strategies of businesses have to be changed to adapt to these changing consumer wants and needs. One of the main conditions that have to be improved to achieve this is to increase the competitiveness of the potato processing industry.

6.1 Product Strategies

Product quality has become increasingly important as the processor has to adhere to strict health and safety standards as consumers' needs are constantly changing towards these characteristics. In the South African potato processing industry the processors is still relying on old cultivars which emphasize the importance of adopting and using new cultivars. Packaging should be of high standards and can be used as a tool to differentiate your product from the competition, which will increase non-price competition and efficiency (Vegsys, 2003).

6.2 Brand Strategies

Brand strategies should be used to build up brand loyalty, through for example guaranteeing superior quality of products, although this might lead to higher barriers to entry as new firms may find it more difficult to attract buyers, which have loyalty to products of existing firms (Vegsys, 2003).

6.3 Price Strategies

In free markets, demand and supply determines prices, but in the South African potato processing industry this condition is not always met, as there is not sufficient buyers and sellers to allow this. To ensure a more efficient industry, barriers to entry should be decreased to ensure that more firms enters the industry, breaking up market power of the leading firms which have to much control (Vegsys, 2003).

7. Conclusion

7.1 Structure

As found the industry is dominated by a small number of firms, confirming the oligopolistic nature of the industry. This is evident when considering the fact that McCain has 75% of the market power in the frozen fries industry, with Frito-Lays having 65% of total market share in the crisps industry. This is further proven by the HHI as calculated for the crisps- and frozen fries industries, which was 5130 and 5950 respectively. A characteristic of this market form is the fact that the larger firms are the price setters, as they control prices through their output decisions, while the smaller firms just have to adapt to this. The concentration within the South African potato processing industry is thus very high, which hinders competition and efficiency within the industry, as SCP

Paradigm theory suggests. A number of important barriers to entry were identified, with economies of scale being one of the direct consequences of concentration issues. Big companies such as McCain has the ability to produce at much lower costs, and usually has significant knowledge and expertise in specialized processes, making it very difficult for new a entrant to competitively enter the industry. Poor trust within the industry, both between firms, and between firms and producers, was also found to be a direct effect of to high concentration, which gives to much market power to individual firms. It is thus very important to find a way to lower concentration and increase competition within the industry, which can only be achieved by lowering entry barriers and creating incentives for new potential entrants.

7.2 Conduct

As suggested by the SCP Paradigm, the structure of the potato processing industry will influence the conduct of the firms or role players within it. This means that pricing, research and innovation, advertising and anti-competitive behavior will be directly influenced by the structure within the industry. One of the characteristics of firms in an oligopolistic market is that firms tend to get involved in price wars. Price wars between firms in this industry will however be detrimental to all parties concerned. It is sometimes thought that the consumer benefits due to the lower prices but this is not necessarily true. When companies compete and end up in a price war, it generally leads to the companies lowering value along with price. In the end the companies lose profit and the customer loses value. It was found that high cost raw materials make up 65% of total production costs, and act as a threat to processors, and has a significant effect on how they approach their management expertise. Firms within the South African potato processing industry should increase their efficiency by focusing on non-price competition, such as brand strategies, advertising and contracting directly with farmers to increase sustainability with respect to quality and price. One of the main objectives of the Australian processing potato industry is also to increase research and innovation, to better satisfy consumer demand. Differentiation in the industry was found as one of the main tools used by firms to increase profit margins, with differentiated products separating their product from the competition, almost giving them small monopoly like qualities.

High product differentiation is usually present in oligopolistic markets, as it helps steer the companies away from price wars. Another major concern within the potato processing industry is securing the right quality and quantity of the right variety potatoes. Quantity was underlined as very important because of low profit margins of the industry. This is why contracting directly with farmers was found to be extremely important. Trust is however an issue, because of high market concentration. This means that farmers do not enter into long term contracts with processors and often defaults on their contract when the spot price is higher on the fresh produce market, even though the perception is that contract price is generally higher than the average spot price.

Although the HHI was found to be very high and thus representing a tight oligopoly there was no evidence of collusion found from discussions with the processors which might be found strange. The reason for this might be due to the fact that low cost imports prevents collusion between firms as not all firms have equal processing cost due to differences in sizes and relative market share. Fixed price through collusion will be set below import price which is impossible for especially smaller potato processing firms which do not have economies of scale. The second reason for a lack in collusion might be due to the nature of potatoes which includes various cultivars with different characteristics. These characteristics of different cultivars cause specific cultivars to be suited for a specific product. McCains for example contracts directly with the farmer to produce specific quality of a specific cultivar and only buys from these farmers making it difficult to collude.

7.3 Performance

Profit margins were found to be very low for this industry, which is the reason why processors focus on quantity. The impacts of growth were found to be determined mainly by demand, offering, price and availability. Low profit margins might be the due to high input costs, especially raw materials, and processors also struggle to get cooperation from producers, also due to trust issues. Low cost processed product imports has also been a problem for domestic processors, as imports of processed products into South Africa has been rising over the last few years, together with rising domestic demand for processed

products. The case study done on the Australian processing potato industry revealed that similar problems exist. Increasing global competition in the form of low cost imports, and rising production costs in Australia, emphasizes the importance of increasing competitiveness of the industry. The proposed strategic plan for the Australian processing potato industry focus primarily on improving productivity through the whole value chain, and improving information and communication systems to become a competitive, consumer driven industry.

The South African potato processing industry is also not competitive enough on a global level, due to high concentration levels and lack of efficiency. It is important that collaboration through the whole value chain be improved, to improve productivity. One of the first steps to increase efficiency and collaboration between producers and processors is to lower entry barriers and create incentives for new entrants. Timely response to rapidly changing consumer demand is also seen as a major factor of success in the future. This will lead to a lower concentration and better distribution of market shares, which will allow processors to engage more effectively into long term contracts with producers which are much needed in this industry to provide more stability with respect to price, quality and quantity.

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