

BUSINESS OPTIMISATION AT SIMONSIG WINE ESTATE

by

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**BUSINESS OPTIMISATION AT SIMONSIG WINE
ESTATE**

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EXECUTIVE SUMMARY

Annual production in South Africa's wine regions positions South Africa amongst the top ten leading wine producing countries in the world. The wine industry was chosen for this project because of the industry's local significance, its growth determined by globalisation and its remarkable input into the South African economy.

Simonsig is one of South Africa's most reputable wine producers and leading private producers of estate wines. Simonsig maintains the renowned status of pioneering wine excellence through sustainable quality and innovative winemaking. Simonsig produces, bottles, markets and sells wines both locally and internationally. The aim of the project is to improve the wine production and local distribution processes to reduce unit costs resulting in increased profits and market share. Also to expand Simonsig's marketing brand to increase market competitiveness.

Fundamental rethinking and radical redesign was applied on Simonsig's business processes, and this project delivers a complete and fresh Business Optimisation at Simonsig Wine Estate.

Special tanks to:

The entire Simonsig team and in particular:

Hannes Meyer – Méthode Cap Classique and White Wine maker
Debbie Thompson – Red Wine maker
Jacques Jordaan – Marketing Manager

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1. INTRODUCTION

1.1. BACKGROUND

The South African wine industry generates approximately 1,000,000,000 litres of wine annually. Yearly production among South Africa's wine regions position South Africa amongst the top ten leading countries for wine production. The wine industry was chosen for this project because of the industry's local significance, its growth determined by globalisation, its remarkable input into the South African economy and because of the underdevelopment in terms of applying concepts of business process orientated formations.

In the wine industry, quality is the focus point for process and product design. Quality in the wine industry refers to the specific characteristics of a wine for it to be classified as a “premium” wine. Quality is designed and applied inside the production process that grasps customer requirements and manufacturing capabilities, value for money and customer objective of the product. Quality is the on-going benchmark for the industry to continuously improve (24).

Simonsig is one of South Africa's most reputable wine producers and leading private producers of estate wines. Simonsig maintains the prominent status of pioneering wine excellence through sustainable quality and innovative winemaking. The estate is situated in Stellenbosch, South Africa's premier wine region. Surrounded by the beautiful Simonsberg Mountain it is named after, the Mediterranean climate and quintessential terrior is the ideal combination to create world class wines.

Simonsig produces, bottles, markets and sells wines both locally and internationally.

Simonsig wines are sold in more than 40 countries in the world. Their key export markets include the United Kingdom, the United States of America, Russia, Belgium, Kenya and the Netherlands. The local market contributes to more or less 50% of Simonsig's annual sales and is therefore extremely important.

Simonsig has ranked in numerous awards for its wide range of red, white and sparkling wines.

With a proud heritage and family tradition, Simonsig is a successful family business. Their ground-breaking innovations consist of South Africa's first Méthode Cap Classique, Kaapse Vonkel, more than 30 years ago which is a bottle fermented sparkling wine made in the style of French champagne, together with South Africa's first South African Rhine Riesling and wooded white wines. Frans Malan, the original owner of Simonsig, was one of the three founders of the well-known Stellenbosch Wine Route in 1971 to introduce local wine producers and cellars to wine enthusiasts and tourists world-wide, this was a major breakthrough for the wine industry and positioned Simonsig as an industry leader at an early stage.

The vineyard consists of 206 hectares at the foothills of the Simonsberg Mountains, with sandstone, decomposed granite and shale soils. Harvest time is February to March and the production average is 8 tonnes per hectare.

1.2. PROBLEM STATEMENT

In recent years Simonsig experienced rapid company growth together with facing other industry unique challenges, including the consolidation tendency that threatens the competitiveness of smaller wine producers, the rapid increase in prices due to tax laws, consumers following the trend of buying less expensive wines as well as production and infrastructure losses due to copper theft in the Stellenbosch region. These challenges create undesirable lead times, high inventory levels and wastages.

1.3. PROJECT AIM

The aim of the project is to improve the wine production and local distribution processes in order to reduce unit costs resulting in increased profits and market share. Also to expand Simonsig's marketing brand to increase market competitiveness.

1.4. PROJECT SCOPE

This project will cover a study in the form of a Literature Review. The Literature Review will be an in-depth investigation into: business processes; business process re-engineering definitions, methodologies and benefits; the VCOR (Value Chain Operations Reference model) or newly transformed VRM (Value Reference Model) business reference model; and an investigation of the wine industry and the winemaking process.

A preparation for the re-engineering effort will be conducted; this will cover the formulation of Simonsig's vision and mission statement for the re-engineering; identification of possible quick solutions; and defining the four wines that will be used in the project.

The four wines under investigation will be evaluated in terms of the VCOR value reference model to identify shortcomings and potential improvements.

As-Is process mapping will be conducted on the program Bizagi Process Modeller. Bizagi Process Modeller is a free application used to diagram and document processes using the Business Process Modelling Notation (BPMN) standard notation.

A data analysis will be conducted; including harvest statistics, blending, and bottling statistics. The data analysis will be executed on Microsoft Excel.

A queuing theory will be conducted on the incoming grapes per day to analyse the queues that form during harvest time with the aim of identifying potential improvements.

Benchmarking and best practises will be conducted to identify the industry 'best practises' and evaluate Simonsig's processes in terms of a SWOT analysis.

To-Be processes will be designed and validated in a trade-off analysis. The selected To-Be designs will be analysed in terms of cost of improvement, time to implement improvement, method of improvement, and the impact of improvement. Improvements will be presented in a Business Case.

A conclusion and recommendation will be delivered to Simonsig, as well as a conclusion on the full impact of the project.

1.5. PROJECT DELIVERABLES

The project will deliver a study in the form of a Literature Review of business process re-engineering techniques, the wine industry and winemaking techniques, as well as the VCOR balance business reference model. It will deliver an analysis and process maps of the current situation. It will also deliver potential improvements to the As-Is processes, best practises and To-Be process designs. A conclusion, recommendations, a Business Case, as well as an implementation plan will be summarised and delivered to Simonsig.

1.6. METHODOLOGY

1. Conduct a literature review: A study of business process re-engineering techniques, the winemaking process and industry, and the VCOR business reference model.
2. Preparation for re-engineering: Set progressive business goals, identify Simonsig's business objectives and formulate a vision and mission statement.
3. As-Is Process Analysis: Process analysis and process mapping.
4. Perform Data Analysis: Data analysis, queuing theory, and identification of problem areas
5. Benchmarking: Identify competitors, examine industry best practices; evaluate Simonsig's processes with a SWOT analysis.
6. To-Be Process Design: Identification of improvements, trade-off analysis between improvements, validates improvements, summarise the costs, time, and impact of the improvements, deliver a Business Case.
7. Conclusion and recommendations: Summarise conclusions and recommendations and validate the full impact of the project.

The practical implementation of the findings will not be included in the project.

2. LITERATURE REVIEW

Business transformation is the “art and science” of analysing and designing business processes together with implementing the process into its environment. There are fundamental tools for a business optimisation which are modelling methods, graphic illustrations, and business reference models. A reference model provides the general elements for business process; business modelling allows viewing the business process as a model of the actual situation; and the graphic illustration is the means of presenting the renewed process to the involved parties. (Van Rensburg, A. 2009, 10)

The Literature Review is a study of business process re-engineering methodologies; business reference model – value reference model; and the wine industry and winemaking process.

2.1. BUSINESS PROCESS RE-ENGINEERING

2.1.1. Business Process Re-engineering definitions

A business process in its simplest form is an input that is transformed into an output by means of an activity. “A business process is a series of steps designed to produce a product or a service. It includes all the activities that deliver particular results for a given customer.” (Mayar & Dewitte, 1998, 2)

A business process is the combination of four main sub-processes which is strategic processes, tactical processes, value chain processes, and support processes. Every sub-process contributes to the business process to promote the customer. The strategic process defines a plan for the business process. The tactical process ensures that the business has the necessary capability to perform the business process; the process is performed by means of controlling the capacity and activities in the supply chain process. The value chain network process includes all the procedures from the raw material to the final product, which delivers value to the customer. The support process supports the other three sub-processes (10).

Business Process Re-engineering (BPR) “involves the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed.” (Hammer & Champy, 1993, 1)

A BPR’s focal point is processes and does not focus on everyday jobs or individuals. It is conducted to redesign the strategic and value added processes that exceed organizational boundaries. A business is only as effective as its processes. It is often found that organisations operate in terms of individual departments and not processes. Focus should be shifted to business processes.

Process maps are vital for every project. Process maps illustrates how work flows through a business, identifies current As-Is business processes and can be the starting point to create To-Be process maps for Re-engineering.

After process identification and process mapping, deciding which process needs to be re-engineered and which one doesn’t is another challenge. It is impractical to simultaneously re-engineer all processes. There are three main criteria that one should consider in the determination of which process needs to be re-engineered: First, is a process not functioning up to standard? In other words, which process function the worst? Secondly, which process is the most significant and important in terms of customer satisfaction; thirdly which process has the feasibility to be most likely successfully re-engineered (7)?

2.1.2. Business Process Re-engineering methodologies

A method is a prepared, single-intention control or practise. Methods usually have a theoretical background, but it is not required. Generally, methods are developed as a combination of the best-practices experience in a certain field of activity (21). In order to solve the problem, an investigation into possible methods to solve the problem, needs to be conducted.

Table 1 - Re-engineering Method One

Activity	Method (3)
1	Conduct a vision and strategy.
2	Create a desired way of business.
3	Incorporate and improve the enterprise.
4	Develop technology solutions.

Table 2 - Re-engineering Method Two

Activity	Method (1)
1	Establish customer requirements and place goals for the process.
2	Map and evaluate the existing process.
3	Analyse and alter existing process.
4	Design a re-engineering process.
5	Implement the re-engineering process.

Table 3 - Re-engineering Method Three

Activity	Method (4)
1	Locate a direction.
2	Baseline and benchmark.
3	Create the vision.
4	Initiate problem solving projects.
5	Design improvements.
6	Implement transformation.
7	Set up for continuous improvement.

Table 4 - Re-engineering Method Four

Activity	Method (5)
1	Motivate re-engineering.
2	Validate re-engineering.
3	Plan re-engineering.
4	Launch re-engineering.
5	As-Is explanation and analysis.
6	To-Be design and justification.
7	Implementation.

Table 5 - Re-engineering Method Five

Activity	Method (6)
1	Preparation.
2	Detection.
3	Vision.
4	Technical and social design.
5	Alteration.

Combination of Methodologies:

A consolidated methodology was developed from the five methodologies above to provide an ordered approach to Business Process Re-engineering (7).

Figure 1 - Five Activity Method



1. Prepare for re-engineering.

Before a re-engineering project is conducted, a process needs to have a significant need to be re-engineered. Consensus has to be reached between the stakeholders involved on the significance of re-engineering and the correlation between business goals and re-engineering. This results in a positive outlook to implement change for the better. Cross-functional teams must be put together. Strategic direction from the top is essential. To plan organisational changes throughout the business, the input and cooperation of various cross functional areas are vital to create guidelines for the re-engineering project.

Understand the customer's expectations and where the existing process does not meet those expectations. Identify the customer's motivated objective and formulate the vision and mission statement. The vision statement is what the company believes will be the outcome of the re-engineering process. The vision statement is a good measurement and motivation for progress.

2. Map and analyse As-Is processes.

Develop a clear understanding of the existing process before re-engineering can proceed. Map the existing process, analyse the process and improve where possible. The improvement should provide remarkable results. The most important objectives of this activity are to recognise anything that hinders the current process from reaching pre-set goals, to examine the information transfer between organisations or stakeholders and to identify the processes that add value to the end customer. These steps are kicked off by initial outset and documentation of individual activities inside the processes and after activity conceptualisation, process models are mapped by making use of different modelling methods. The sum of time and cost mandatory for each activity, are calculated through either simulation models or activity based costing. The end result is the identification of processes that needs to be re-engineered.

3. Design To-Be process:

The point of To-Be process creations is to produce one or more options to the current circumstances that will satisfy the planned goals of the business. The initial stage for this activity is benchmarking. "Benchmarking is the comparing of both the performance of the

organisation's processes and the way those processes are conducted with those relevant peer organisations to obtain ideas for improvement.” (Manganelli, Raymond, Klein & Mark, 1994, 6) The organisations involved in the benchmark comparison need not only be competitors or industry leaders, innovative practises from any foundation can be reproduced. After identifying potential improvements that can be implemented on the existing process, To-Be process models are developed through making use of the available modelling methods. The time and cost of each activity in the re-engineered process are calculated through simulation modelling and activity based costing. A number of To-Be models are available for validation and trade off analysis to ensure that the best possible To-Be models are selected for implementation.

4. Implement Re-engineering

Implementing the re-engineered results is usually combined with resistance from affected parties. A culture change program can be initiated at the same time as preparation and planning to ease into new methods. This allows for a smooth transition. The most important part of business process re-engineering is to convince everyone involved that change is essential. Develop a transition plan to implement re-engineering results. The transition plan must combine the re-engineered process with the organisational configuration, information systems, and the business rules and measures. A business process re-engineering project must be combined with the information system that needs to support the process to ensure success. As-Is processes can be mapped against To-Be processes and initial changes can be listed to be implemented. Additional necessities for the To-Be process can be incorporated and the outcome organised into a Work Breakdown Structure to determine the time chronological relations between the intended activities. Together with exempling and simulation techniques, the changeover plan is defined and preliminary versions are tested and demonstrated. Training programs are started and the re-engineered plan is implemented in full scale.

5. Improve Process Continuously

The continuous improvement of a re-engineered process is an important aspect to guarantee success. The first step in the continuous improvement step is monitoring. The progress of action and the results have to be monitored. The progress of action is measured by observing

how informed the people feel, how much commitment the management shows and how change was accepted. This can be performed by means of attitude surveys and discrete conversations with those not directly involved. Measures such as employee attitude, customer perceptions, supplier responsiveness etc. should be used for monitoring. A feedback loop is put into action through reinforced communication, on-going measurement and reviewing of performance against defined goals. The process is continuously re-mapped, re-analysed and re-designed. TQM (total quality management) can be combined with business process re-engineering efforts to continuously improve the process. TQM in a newly designed process should be part of the re-engineering effort.

Benefits of Re-engineering

The benefits of a successful process improvement effort includes: “better operational efficiency; increased profitability; better customer relations; shorter process cycle times; lower operating costs; increased accountability; and improved market competitiveness.” (Ahadi 2004; Raymond et al. 1998)

Together with increased operational efficiency, a sufficient BPR will also allow faster reaction to changes that are very common to the agricultural environment.

2.2. VALUE REFERENCE MODEL

A *value chain* is “the sequential set of primary and support activities that an enterprise performs to turn inputs into value-added outputs for its external customers” (Porter, Michael E). A sequence of connections that include organisations, resources and knowledge creates and delivers value to the end customer and satisfy the market demands. The value chain joins supply chain activities from the early definition of customer requirements, throughout the product/service development, production/operation and distribution, with the first-, second-, and third suppliers included. The purpose of value chain is to place organisations in the supply chain to attain the highest levels of customer satisfaction and value, as well as to effectively utilise the competencies of all the organisations in the supply chain (11).

The *Value Chain Group* in alliance with its subscribing members defines, arranges and sustains the Business Process Transformation Framework (BPTF). The BPTF is dynamic documentations of business process reference glossaries, value chain models and continuous improvement models enclosed in combined business framework architecture.

A basic value chain framework arranges people, business processes and technology capabilities into a sequence to hasten complicated and complex transformations into a successful operating enterprise. This alignment improves the harmony and agreement between value chain partners and also helps in assisting them to implement enhanced business models. The three components out of which as value chain framework comprise is: the value chain segmentation, the business building block, and continuous improvement (12).

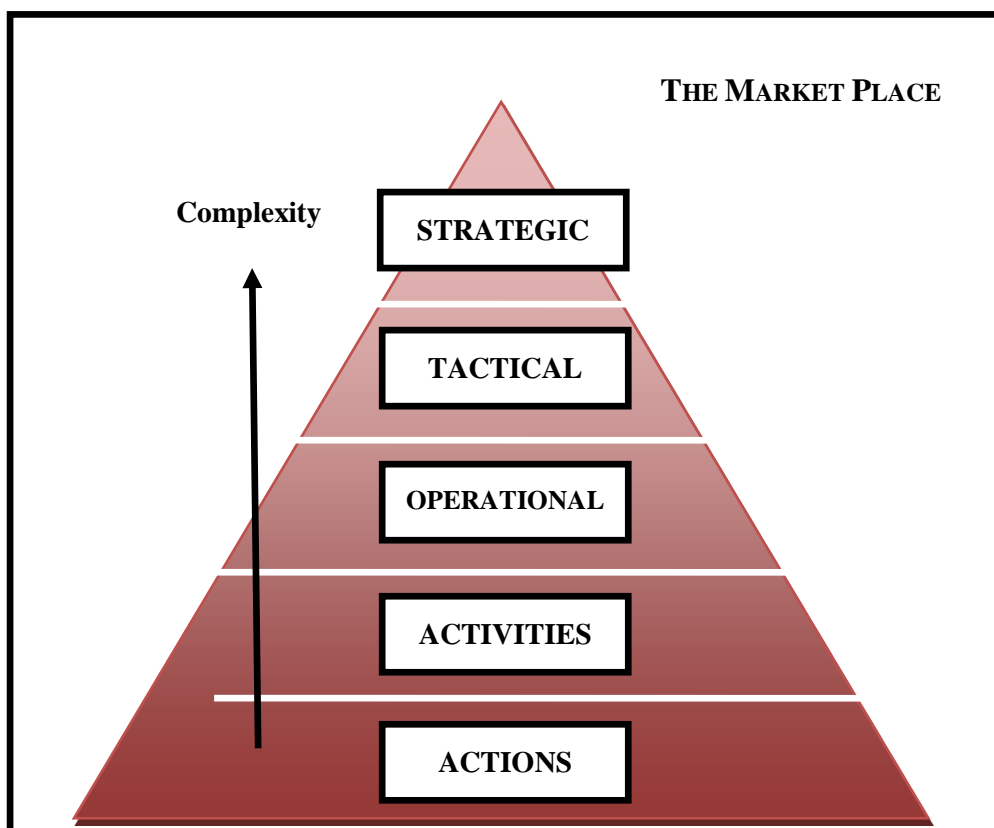
The *Value Chain Operations Reference model* (VCOR) goes further than the SCOR reference model by following a larger and more integrative approach and tries to support the smooth and effective management distribution network research, planning and development, sales, marketing, resources, production, distribution and other processes. VCOR is a support tool to amalgamate interdependent components across a products life series, supply networks, and customer requirements. VCOR has a much more significant approach than SCOR, yet it has not met the industrial awareness than SCOR. The VCOR model was modified to the Value Reference Model (VRM) (13).

The *Value Reference Model* (VRM) supports the key elements of the chain and the connection between the different individual components of the chain to promote planning, governing and execution, which is the information, financial and physical flows of the chain. The objective is to amplify the chain’s performance and to continue the everlasting evolution.

The three foremost components of an enterprise are global product expansion, global supply network incorporation, and global customer accomplishment. The VRM makes use of one reference model to deliver a vision of an integrated value chain.

VRM provides a common language and standard process descriptions in order to understand the activities that are the building blocks for the value chain. It includes entirely connected inputs and outputs that add to comprise each activity; it also includes a metrics glossary, benchmarks and a compilation of recommended practises. When a VRM situation is constructed, an enterprise can observe their value chain and compare it with other organisations in the industry. Another benefit of the model is that corporations can make use of benchmarking and best practises to organise and plan improvements, compute the profits and advantages of implementing modifications, and practise competitive advantages determined in the process (14).

Figure 2 - The Structure of the Value Reference Model



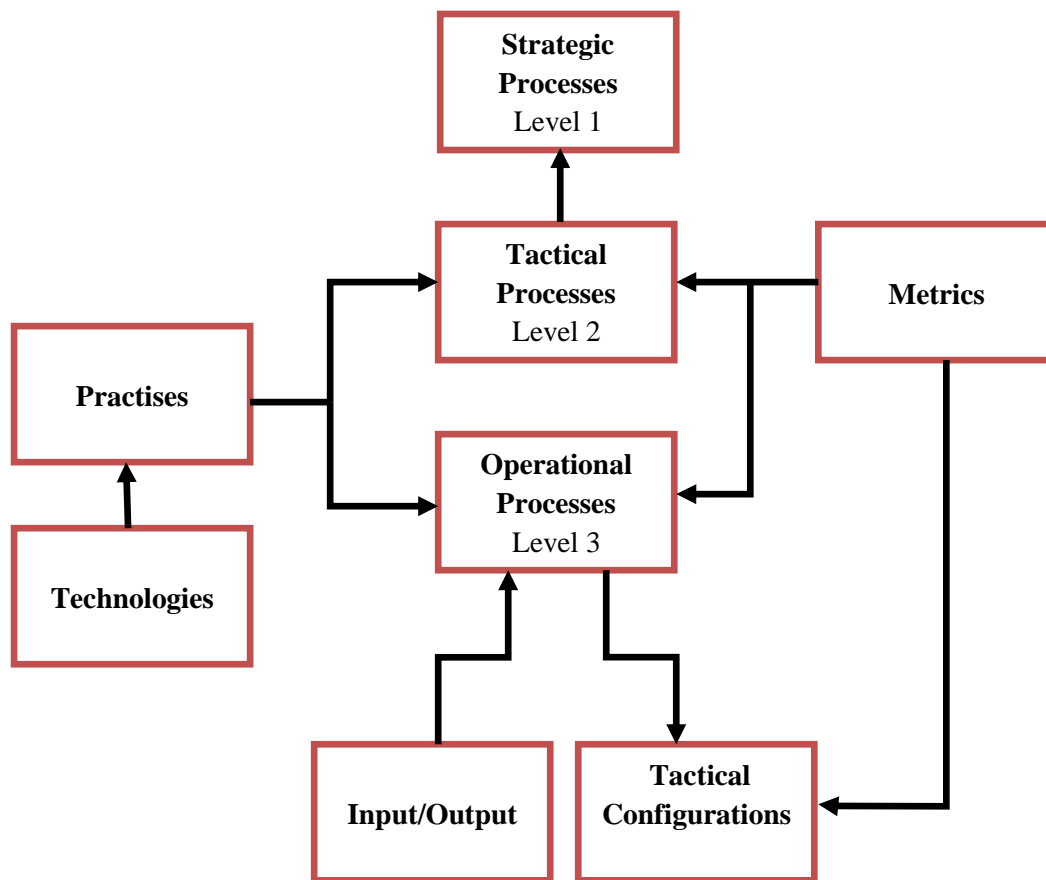
- **Strategic-Processes:**
The strategic processes in a value chain are the macro processes inside the chain.
- **Tactical-Processes:**
Expresses the context as a division of the Company's Strategic Processes. Specific sets of VCOR operational processes can be allocated to applicable schematic business tactics to formulate the Tactical VCOR configuration.
- **Operational-Processes:**
The lowest commonly applied level of the VCOR frame work. An operational process is a basic process that put together the link between a business and a specific activity.
- **Activities:**
A breakdown of a VCOR operational process, each activity is specific and unique to a business that may, or may not be shared with other.
- **Actions:**
Work instructions in its smallest form, it is individual and cannot be decomposed (14).

The Strategic level of the Value Reference model is expressed in terms of three macro processes: Govern, Plan, and Execute.

- **Govern:**
Govern is the decision based macro process that classifies and make a value chain possible by means of setting up rules, policies and procedures to manage the implementation of the plan and execute processes.
- **Plan:**
Plan is the macro process that balances the existing strategic objectives with the existing resources and defines the course of action of the activities in terms of the business goals.
- **Execute:**
Execute is the macro process that transform the product into the desired product according to customer requirements. The execute process is performed within the specification limits defined by management and is defined to the criteria stipulated in the plan process (14).

A Value Reference Model result is a combination of processes portraying every activity of the business enterprise. Metrics, Inputs/Outputs, benchmarks and best practises are illustrated a model using the following procedure (14):

Figure 3 - Value Reference Model Procedures



2.3. QUEUING THEORY

A queue is a line or a sequence of items, waiting for service. Before describing the queuing system, the queue discipline needs to be identified and the way in which the items form in the queue. The queue discipline defines the manner used to regulate the order in which items are served. There are four types of queuing disciplines. The first and most common is the FCFS (first come, first serve) discipline, in which items are processed in the order they arrive. The second is the LCFS (last come, first serve) discipline, in which the items that arrive last are processed first. The third is the SIRO (service in random order) discipline, where there is no specific order in which the items are processed. The fourth and final queuing discipline is the priority queuing disciplines, a priority discipline characterises each individual arrival into one of the other three disciplines (27).

There are three main characteristics of a queuing system that needs to be identified in order to use a queuing theorem.

1. The Arrival Process: A probability density function that determines the arrival of the items needs to be defined. A constant arrival rate is determined by the number of items arriving per time period. The arrival rate will be constant between following items. The arrival rate is Poisson distributed.
2. The Service Process: A probability density function that determines the service rate of the items. The service rate is determined by the number of items that a server can service per time period. The service rate is exponential distributed.
3. Number of servers: The number of servers is the amount of servers available to service the queue.

M/M/1 Queuing Theory

An M/M/1 queuing system is the simplest queuing system with only one server. The M/M/1 queuing system can be used for a variation of problems because it is possible to determine large independent items as Poisson distribution. But using a Poisson distribution is only a basic approximation.

Quantities to be defined in an M/M/1 queuing system (28):

λ = average number of arrivals entering the system per unit time

μ = average number of customers serviced per unit time

Lq = average number of customers waiting in line

$$Lq = \frac{\lambda^2}{\mu(\mu - \lambda)}$$

L = average number of customers present in the queuing system

$$L = Lq + \frac{\lambda}{\mu}$$

Wq = average time a customer spends in line

$$Wq = \frac{Lq}{\lambda}$$

W = average time a customer spends in the system

$$W = Wq + \frac{1}{\mu}$$

M/M/S Queuing Theory

Quantities to be defined in an M/M/S queuing system (28):

ρ = Traffic Intensity

$$\rho = \frac{\lambda}{s\mu}$$

π_j = steady-state probability that j customers are in system

$$\pi_0 = \frac{1}{\sum_{i=0}^{s-1} \frac{(s\rho)^i}{i!} + \frac{(s\rho)^s}{s!(1-\rho)}}$$

Lq = average number of customers waiting in line

$$Lq = \frac{P(j \geq s)\rho}{1 - \rho}$$

L = average number of customers present in the queuing system

$$L = Lq + \frac{\lambda}{\mu}$$

Wq = average time a customer spends in line

$$Wq = \frac{P(j \geq s)}{s\mu - \lambda}$$

W = average time a customer spends in the system

$$W = \frac{L}{\lambda}$$

2.4. THE SOUTH AFRICAN WINE INDUSTRY

Throughout the ages, wine has been a part of civilization. South Africa's winemaking history dates back to almost 300 years. The industry wine reflects South Africa's and the Cape's rich culture, combining class with innovative and playful tastes. Lately, the industry shifted towards a much more vibrant vision focussing on innovation, market satisfaction, being globally competitive and being highly profitable. This new revelation ensured that the local wine industry is now a worthy competitor in the global market, making the South African wine industry the 7th largest in the world. The wine industry also makes an immense contribution to South Africa's economy and tourism.

2.4.1. The building blocks of the South African Wine Industry

Up until the 20th Century, KWV was the main organisation in the South African wine industry. KWV regulated the South African wine industry, dominating production and marketing of wine. In 1998 KWV faced deregulation, and the SAWIT (South African Wine Industry Trust) received mandate of funds made available by KWV for the revolution of the wine industry. KWV was converted from a co-operation to a company. The SAWIT had two main objectives to accomplish with the mandate of additional funding, first was to improve the Socio-economic transformation and growth of historically disadvantaged within the South African wine industry; and second was to increase the commercial development and promotion of the South African industry to ensure global competitiveness and sustainability.

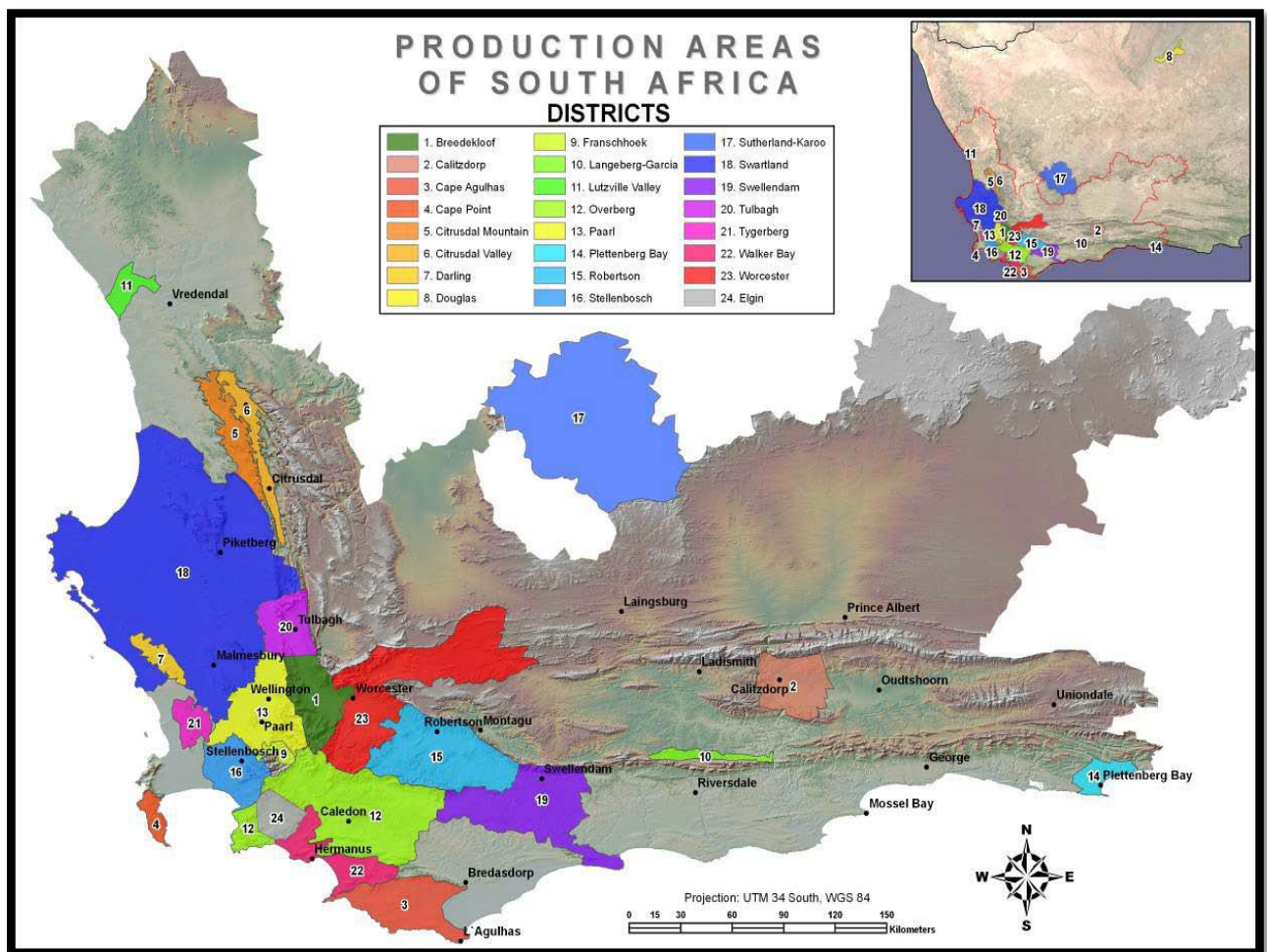
The deregulation of the wine industry resulted in the formation of various wine organisations, each representing a certain sector of the industry and playing a role in the functioning of the industry. Amongst these structures is the SA wine council and other, including the Wine & Spirit Board, SAWIT (the ministry council appointed to act as the industry trust, mentioned above), RUDNET (a consortium of rural and civil society non-government organisations), and other private and professional wine societies.

2.4.2. South African wine production

South Africa's wine region is the Cape. The Cape land is especially suitable for wine production, and is situated near the capital Cape Town, which simplifies access to the global markets. The Cape Winelands has a warm moist climate known as Mediterranean with hot

dry summers and rainy not too cold winters. The areas where wine is produced are divided into regions. Wine producers can now mention where each wine grape is cultivated, this helps the wine consumer and enthusiasts to recognise and appreciate their wine. There are 10 main regions in South Africa, namely the Western Cape: which includes Breede River Valley, Coastal, Cape South, Klein Karoo, Boberg and the Olifant’s River regions; Northern Cape; Limpopo; and Eastern Cape (18).

Figure 4 – Wine Production Areas of South Africa



South Africa has approximately 4 360 wine farmers cultivating about 112 590 hectares of land under vineyards. These farmers provide employment for some 345 500 people, mostly farm workers and cellar staff. 834 million litres of wine are produced annually. Half of the total wine production which is approximately 400 million litres of South African wine are exported annually. It is estimated that the 2012 harvest will yield about 1 350 000 tons with an average wine conversion of 772 litres per ton. These conversions include all types of

grape drinks, non-alcoholic, brandies etc.; however the estimate shows that the wine industry will still experience growth in 2012 (16, 17).

Interesting is that it has been identified by commentators that white wine cultivation is the most momentous. White wine does not receive that much pressure from abroad taxation and over-supply, which has affected red wines. Winemakers have invested in cultivating white wines as an alternative. Changing the condition in the land on which grapes are produced, eliminates the likelihood that infections are transferred from one year to another and also change the nutrients demanded by the soils; ensuring sustainable development.

The meaning of the word ‘wine’ has a much deeper meaning to the Wine Industry than its everyday meaning. Products such as rebate wine and distilling wine is the key elements of brandy that forms a noteworthy part of the industry. The South African Wine industry comprises of wine (natural, fortified and sparkling), rebate wine, distilling wine, brandy and other distilled products. Together with grape juice, and grape juice concentrate used for wine production and non-alcoholic drinks.

There are three types of wine: natural wine, fortified wine, and sparkling. *Natural wine* is where the smallest amount possible of chemicals and additives are added to the wine, and does not use excessive technological procedures. It is non-fortified and non-sparkling and includes grape juice and grape juice concentrate. *Fortified wine* is wine in which additional spirits has been added, further alcohol has been added to the base wine to keep the sweetness of the wine while still maintaining a fairly high alcohol percentage. *Sparkling wine* is wine that is carbonated to the point that the pressure inside the bottle that it is sold in is more than 300kPa. This pressure level can either be achieved through fermentation or by adding carbon dioxide. The wine used in the process is the same as natural wine.

Rebate wine is specially prepared double distillation and then left to mature for at least three years in oaks barrels with a capacity up to 340 litres. *Distilling wine* is wine that is especially prepared for the distillation to spirits mostly for brandies and other spirits. *Non-alcoholic* is grape juice that has not gone through a fermentation process (15).

There are three types of wine producers in South Africa. The first is *Estate wineries*, Estate wineries are only allowed, under legislation, to produce wine from grapes grown on their own land. Secondly there is *Producer cellars* who produces wines from grapes attained from their

farmer member shareholders, the merging of multiple farmers has an enormous contribution in production and contributes to approximately 80% of the South African total wine harvest. Thirdly there are the *Independent cellars* and a number of wholesalers who buy in grapes and wine as well as use grapes produced on their own farms, and then make the wine, bottling it under their own brand names.

Latest Wine Industry Statistics

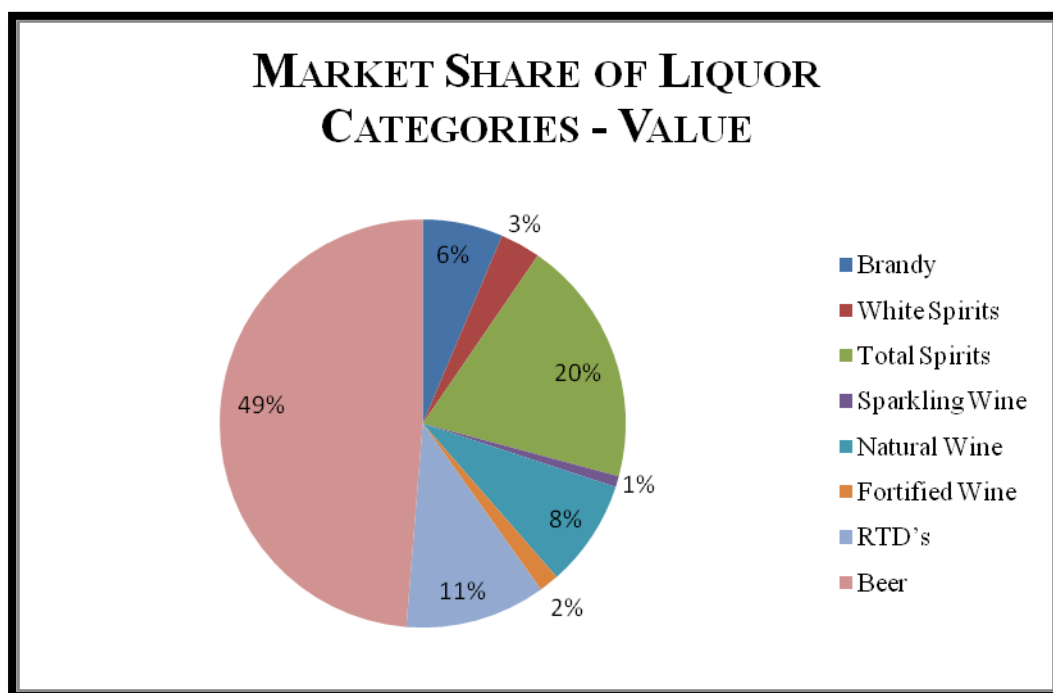
The following table shows the liquor consumption patterns in South Africa for a four year overview. The statistics was obtained from the SAWIS (South African Wine Information and Systems) and it was processed by E. Holtzkampf in February 2012 (19).

Table 6 - Liquor Consumption Patterns in South Africa

Year End June Volume = '000L	2006 – 2007		2010 – 2011	
	Volume	Value	Volume	Value
Brandy	46 600	4 103 664	39 000	4 688 970
White Spirits	22 525	1 569 013	23 870	2 352 830
Total Spirits	114 825	10 862 398	111 320	14 419 932
Sparkling Wine	8 000	459 200	8 320	640 307
Natural Wine	278 600	4 585 676	271 400	6 259 808
Fortified Wine	29 660	889 800	28 595	1 163 817
RTD's (Ready-to-drink)	302 000	5 152 120	354 000	8 206 200
Subtotal	733 085	2 194 994	773 635	30 690 064
Beer	2 778 600	25 007 400	2 937 000	35 831 400
Grand Total	3 511 685	46 956 594	3 710 635	66 521 464

In terms of Volume, Beer has dominated the market with approximately 80%. In volume wine consumption has experienced a slight decrease but in terms of value, wine has currently a 9.2% share in the market, a 1% increase from the 2006/2007 survey. (Holtzkampf 2012:1)

Figure 5- Market Share of Liquor Categories



Consumption of Wine by Type

Table 7 - Consumption of Superior Premium Wine by Type

Super Premium Wine	2009	2010	2011
Red Wine	30,0	41.4	43.1
White Wine	39.2	38.1	37.6
Rosé Wine	21.8	20.5	19.3
Total	100.0	100.0	100.0

A *Super Premium Wine*, (19), is a wine that is considered by wine critics as an excellent wine, these wines are usually more expensive and associated with outstanding quality. Red wine experienced a vast growth in 2009 until 2010, from 30% to 41.4%. This influenced the white and rosé wines. (Holtzkampf 2012:6)

Table 8 - Consumption of Premium Wine by Type

Premium Wine Superior	2009	2010	2011
Red Wine	17.6	17.5	17.2
White Wine	72.4	67.5	65.1
Rosé Wine	10.0	15.0	17.7
Total	100.0	100.0	100.0

A *Premium Wine* is considered a good quality wine at a lower cost. Although white wine’s consumption took a decrease from 72.4 to 65.1, it still dominates the premium wine market. This could be because white wine is a more every day drinking wine in the hot South African weather. (Holtzkampf 2012:6)

2.4.3. Local and International wine trading

Widespread distribution markets ensure that consumers enjoy the product around the world, consisting of wholesalers, retailers, producer cellars, estates and organisations. Traditionally, most of the wines were sold locally but rapid growth in international markets is the reason why South African wines are sold abroad. Wine sales, locally and internationally, showed growth in 2011 with 312 million litres sold on the local market and 346 million litres sold internationally. Sales in the domestic market have increased since 2010 that indicates that the interest in the industry has not only grown internationally, but locally as well.

The wine industry’s contribution to the South African economy in terms of investment, export earnings, employment and supply chain earnings is imperative. The operations and value chain analysis shows that most wineries enters the value chain at the point of sourcing. This contributed to the fact that little attention was focused on the product, the style or range of wines in relation to their target markets or broad marketing strategies. When wineries entered the value chain as land owners or in possession of viticulture of viticulture expertise, the result was a more sustainable and healthy business enterprise.

2.4.4. From the Vine to the Wine

There is now precise recipe for making and bottling wine. The process differs from winemaker to winemaker, but the essential steps stay basically the same. Winemakers have a large number of choices in the winemaking process, from the type of grape used, the behaviour of the wine during the different stages, to the targeted outcome. The wine outcome and quality is highly dependent on the composition and reliability of the grapes used. The basic five steps in the winemaking process are The Harvest, Crushing and Pressing, Fermentation, Clarification, and Ageing and Bottling.

Step 1: The Harvest

Harvesting is the first step in the wine making process. To create a fine wine, grapes must be harvested at the precise time when ripe according to the wine maker. Science and old-fashioned tasting of the grapes determine when the grapes are ready for harvesting. Harvesting can be done mechanically or by hand. When the grapes arrive at the winery, the rotten and under ripe grapes are removed from the rest.

Step2: Crushing and Pressing

Crushing bunches of grapes is the next step in the wine making process. Mechanical presses are used. Mechanical pressing improves the quality and longevity of the wine, while reducing the need for adding preservatives. The winemaker's personal preferences have an influence on the time and method of crushing and pressing. The crushing and pressing procedure is essentially the same for red and white wines, the juice of white wine grapes are quickly pressed out of the grapes with very little skin contact, but the time of grape skin contact for red wine is longer to enhance colour.

Step3: Fermentation

If the grape pulp or juice is left alone, within 6-12 hours natural fermentation will start because of the already present yeast in the air. Winemakers usually interfere at this stage by vaccinating the natural must. In other words, the natural yeast that is wild and unpredictable will be killed and an additional amount of yeast will be added, the quantity will be of the winemakers personal choosing, to make a better prediction of the end result. When fermentation starts, it will generally continue pending on when all the sugar is transformed

into alcohol, the result will be dry wine. Fermentation varies from one wine to the next, due to the sugar and must ratio and the desired alcohol level required. If the fermentation process is stopped before all the sugar is converted into alcohol, the result will be sweet wine. Usually, this is the winemakers own choice.

Step4: Clarification

Once fermentation is done, the clarification process commences. Winemakers have the choice of racking or siphoning their wines from one tank or barrel to the next, to leave the precipitates and solids called pomace in the fermenting tank. Filtration can be done with filters varying from course filters that only catch large solids to a sterile filter pad that filters extremely fine. Finning occurs when winemakers add components, which will help remove dead yeast cells and other solids, to their wines for ultimate clarification. Once the unwanted solids have moved to the base of the tank, the clarified wine is removed from the tank into a separate vessel, where it is then prepared for bottling and further aging.

Step5: Aging and Bottling

The aging and bottling phase is the last procedure in the winemaking process. Following clarification the winemaker can either bottle the wine immediately or allow an additional aging period before bottling. Additional aging can be done in the wine bottle, in stainless steel or ceramic cranks, in large wooden barrels, or smaller barrels. The number of techniques used in this final stage is virtually endless, the end results also differ immensely, but it is known as wine (8).

Further illustration will be showed through process flow charts for White Wine and Red Wine irrespectively.

Figure 6 - White Wine Production Flow Chart (15, 22, 23)

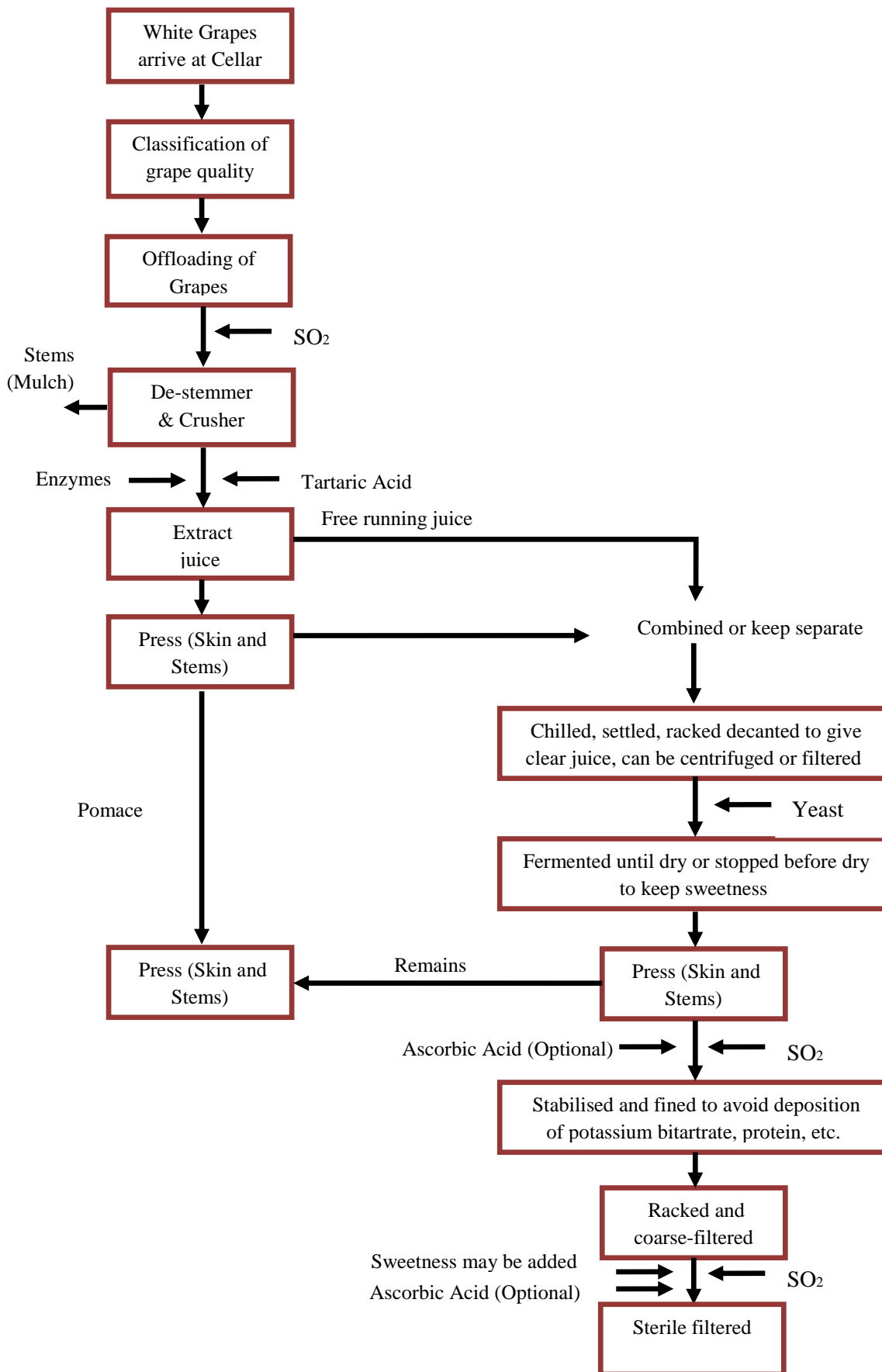
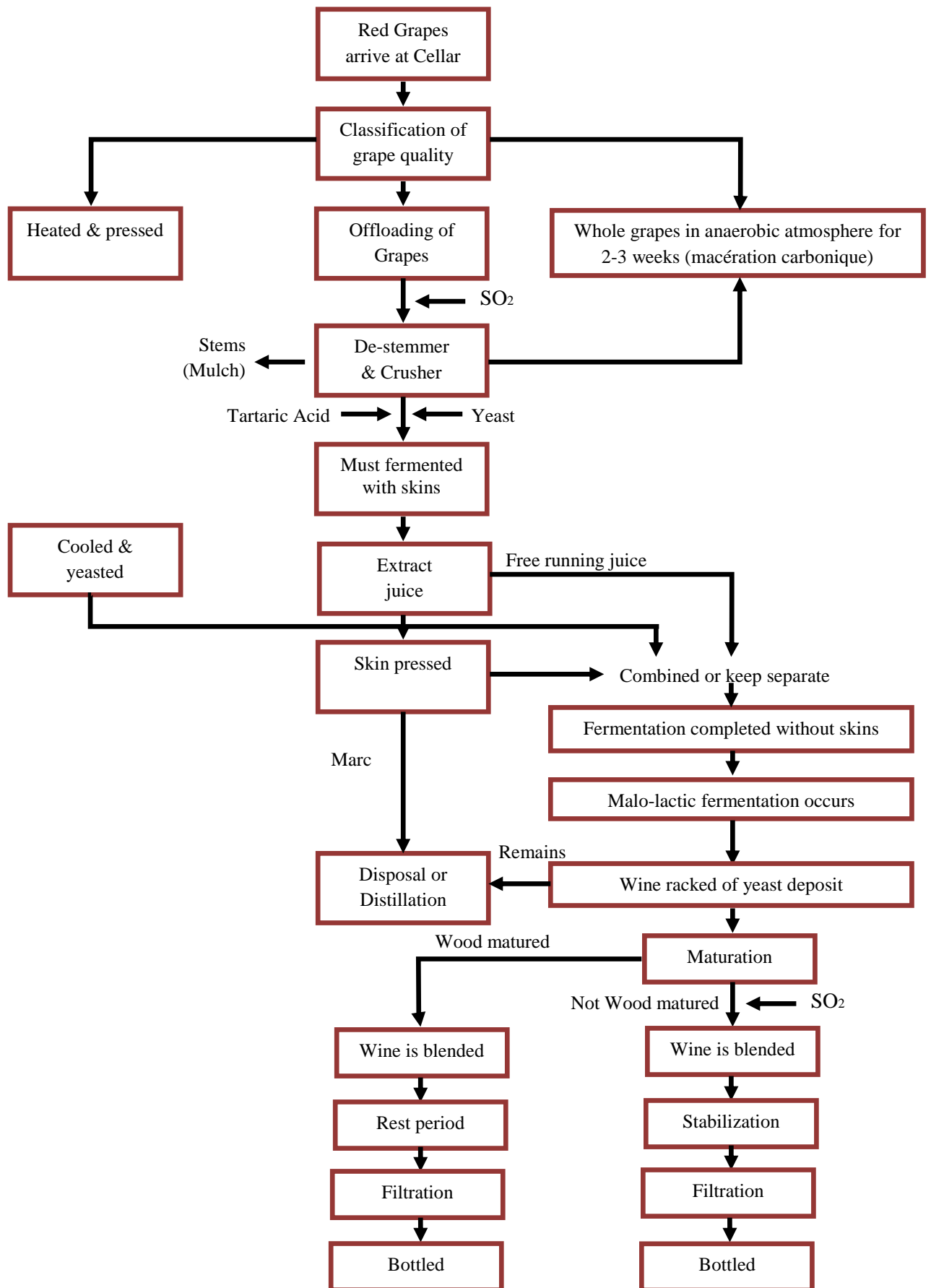


Figure 7 - Red Wine Production Flow Chart (25, 22, 23)



2.4.5. The current situation in the wine industry:

The wine industry is facing industry unique challenges. Three of the major challenges are the increase in price due to tax laws, the consolidation trend that threatens the competitiveness of smaller estate wine producers, and consumers buying less expensive wines.

The South African wine industry holds its breath over sin tax. Sin tax on wine has seen an increase from R0.89 to R2.32 from 2003 until 2012. The vast increase has had a direct impact on wine farmers' profitability. Farmers' expenses have been affected with R1100 per tonne. Tax laws have been increased to 30.7% in 2012. Farmers' feel that the burden of sin tax on wine should be significantly reduced or even abolished because the entire wine making process is an integral part of the agricultural industry of South Africa. Together with facing sin tax challenges, the farmers' have to face agricultural challenges as well, such as droughts etc. (26).

The consolidation of wine farmers to be shareholders in larger producer cellars is threatening the smaller estate wine producers in terms of producing a quality wine at a lower cost. The quantity of grapes that producer cellars receive from their farmers is remarkably more than the quantity that estate wine producers can harvest. Simonsig practises intensive vineyard management to enhance the quality of their harvest. The young grapes are pruned to remove the inferior bunches at an early stage. Allowing well-formed bunches to grow into their full potential. In contrast, Producer cellar farmers place emphasis in delivering the maximum quantity of grapes possible per hectare. The question remains, does the improved quality of the grapes justify the loss in quantity. Many wine farmers believe that it doesn't. This technique will not be questioned in the project because it forms a fundamental part of the wine recipe and is the wine maker's preference.

The third and main problem at the moment in the wine industry is that South African wine consumers are following the trend of buying less expensive wines.

Traditionally, South Africa does not have a wine drinking culture. Wine enthusiasts can become lyrical about wine; they use every sense to smell and taste the wine. They search for meaning in a wine and want the story on how the product is made. For them the authentic holds great significance. Unfortunately, the mass market is casual consumers of wine, that don't appreciate these qualities in a wine. They aren't able to taste the full adventure of an

expensive bottle. Therefore, the mass consumers just purchase a cheaper, everyday drinking wine. Simonsig does not want to reduce their selling price because this may be a reflection of a reduced quality wine. Simonsig wines are generally considered as more expensive and as a result Simonsig is not performing as desired in the local market.

Average Production Costs for Wine Grapes

Table 9 - Average Production Cost for Wine Grapes

PRODUCTION COSTS FOR WINE GRAPES COST ITEMS AT RAND PER HECTARE 2011	
<i>Industry average</i>	<i>Average</i>
<i>COST STRUCTURE</i>	<i>RAND PER HA</i>
<i>DIRECT COST</i>	
Seed	97
Fertilizer	1,061
Organic Material	225
Pesticide Control	1,655
Herbicide Control	592
Repair & Binding Material	362
Subtotal	3,992
<i>LABOUR</i>	
Supervision	1,593
Permanent Labour	5,272
Seasonal Labour & Contract Work	2,246
Subtotal	9,111
<i>MECHANISATION</i>	
Fuel	1,726
Repair, Parts & Maintenance	2,243
Licences & Insurance	422
Hired Transport	242
Subtotal	4,633
<i>FIXED IMPROVEMENTS</i>	
Repair & Maintenance	486
Insurance	221
Subtotal	707
<i>GENERAL EXPENDITURE</i>	
Electricity	1,768
Water costs	846
Land-, Property- & Municipality Taxes	209
Administration	1,176
Subtotal	3,999
<i>TOTAL CASH EXPENDITURE</i>	22,443
<i>PROVISION FOR RENEWAL</i>	4,725
Vineyards	791

Fixed Improvements	2,623
Loose Assets or Production Means	
Subtotal	8,140
<i>TOTAL EXPENDITURE</i>	30,582

The average production costs for wine grapes was included to give an initial understanding of production costs for wine grapes before it enters the cellar.

2.5. LITERATURE REVIEW CONCLUSION

The aim of the Literature Review was to form a theoretical outline for the project, to define important definitions and concepts to understand the Industrial Engineering techniques that are used, and to give the reader a basic understanding of the wine industry and process methodologies within the wine industry.

3. PREPARATION FOR RE-ENGINEERING

In Preparation for re-engineering, the customers' expectation of the product and the motivated objective out of the product needs to be identified. Incorporating the customer requirements a vision and mission statement should be constructed. The vision statement is the organisation's believes of what will the intended outcome of the re-engineering be, and the mission statement is a constant motivation.

3.1. CUSTOMER EXPECTATION

A customer of a bottle wine expects quality. Quality is the characteristic of a wine to be a premium wine. Therefore if a wine is classified as a 'premium' wine, it indicates elegance and quality. In combination with quality, price is a major determinant for a customer on whether he/she is going to purchase a bottle. For the everyday wine purchaser, a lower price for a good bottle wine is better. Therefore customer expectation can be defined as:

A consumer of a bottle wine expects a good quality wine at a low cost.

3.2. VISION AND MISSION STATEMENT

At the moment the current trend among local consumers is to purchase cheaper wines. The consolidation of wine farmers to be shareholders in Producer Cellars is threatening the smaller estate wine producers in terms of producing a quality wine at a lower cost. Simonsig is an estate wine producer, who pioneers wine brilliance and strives to maintain the ultimate level of quality.

The current situation is that Simonsig does not want to reduce their wine price because this may be a reflection of a reduced quality wine, but due to relatively high prices Simonsig is not performing as desired in the local market. The international sales are in most countries fixed under contract. Simonsig wants to improve their sales in the Local Market. The re-engineering will only focus only on the Local Customer.

The vision statement is defined as:

The vision of the project is to improve the wine production and local distribution processes to reduce unit cost resulting in increased profits and market share; also to expand Simonsig's Branding and Sales methods to strengthen Simonsig's competitiveness.

The mission statement is defined as:

The mission of the project is to maintain wine excellence and ultimate quality, while using customer requirements as the main focus and to achieve the end result that is increased profits.

Before conducting an investigation into a Business Re-engineering project, it may be helpful to identify certain quick solutions that can possibly eliminate undesirable lead times, high inventory levels and wastages. Helpful clues are (20):

- Bottlenecks can be removed by identifying the slowest activity in the process and increasing its speed.
- Simplify the process by decreasing the number of steps, difficulty levels and people.
- If a lot of rework occurs, prevent defectives.
- Design flexibility into the process by means of creating parameters that is adaptable to possible change, the process design should allow for future expansion.
- Get rid of the activities, resources and costs that do not add value to the chain.
- Move the process to the target value or decentralise, unless there is major reasons not to. If decentralisation is conducted, make certain it has no effect on service, quality or flexibility.
- Streamline, make things easier, mechanise and join together.
- Give responsibility to employers to handle an entire process.
- Prepare for parallel product design in manufacturing and marketing processes.
- Plan to incorporate quality into the design rather than investigating the quality after production.
- Ensure that the product configuration allows for variety to be added at the end of manufacturing and not the beginning.
- Keep it straight and simple!

Processes that need to be investigated will include:

- The Marketing Process: how does advertising influence the sales in the market, what is the consumption trend, and are Simonsig using it to their advantage, is there any exemption from the normal consumption trends, what is the season trend.
- The Service Process: is it supported by technology, the quality of customer service.
- The Order Process: who is responsible for order management, in what manner is the orders categorised, to what level is the customer involved in the order, what is the order processing performance in other words is the product delivered on time and in good quality.
- The Production Processes: evaluate the flow of activities and reduce cycle time, identify bottlenecks, assess flexibility, integration between production, marketing, orders and supply chains.
- The Supply Chain Process: are there enough inventories for delivery, is there too many that goes to waste, what inventory system is used, is there flexibility to supply seasonal demands.
- The Support Process: is there a process that merges the above processes to ensure that the processes are working as one successful business.

3.3. SIMONSIG WINES

The business re-engineering attempt is going to include four of Simonsig's wines which are: the Chenin Blanc, the Kaapse Vonkel, the Redhill Pinotage, and the Labyrinth Cabernet Sauvignon. Each wine will be discussed in detail below. It is crucial to understand the product in the Preparation for Re-engineering phase, before the re-engineering attempt is commenced (9).

3.3.1. Simonsig - Chenin Blanc



Wine style: Full bodied Chenin Blanc.

Wine description: Vibrant bright straw colour. The wine has an energetic sensation on the nose with aromas of ripe tropical fruits like pineapple, ripe pear, guavas and a hint of floral notes. Sun ripe grapes add to the complex fruit flavours on the palate with hints of honey and raisins. The wine has a fresh crispy and smooth silky texture on the finish.

Vinification: Grapes are handpicked, crushed and some lots are given overnight skin contact. Juice is cold settled to clarify the grape juice before fermentation and to give the wine a fruity finish. The fermentation temperature is initially kept very low (11 to 12° Celsius) and slowly increased towards the end of fermentation when alcohol levels are putting more stress on the yeast. Fermentation towards the end is slow and requires careful nurture to complete. After the wine is blended, further aging is allowed to enhance the flavour and to give it a better feel in the mouth.

Cellaring potential: The wine is should be drunk early once purchased, at its best within 2 years of vintage date.

Region: Stellenbosch

Grapes: 100% Chenin Blanc

Analysis:

Alcohol:	14.6% vol
Residual sugar:	5.94 g/l
Total Acidity:	5.9 g/l
pH:	3.4

3.3.2. Simonsig – Kaapse Vonkel



Wine style: A delicate sophisticated Cap Classique (Sparkling wine) with enjoyable flavour intensity.

Wine description: Lively energetic mousse forms a crown of bubbles in the glass. On the nose Kaapse Vonkel shows lively floral and Chardonnay citrus fruit which is greatly complimented by red berry flavours from Pinot Noir and Pinot Meunier grapes. On the palate the wine shows elegant yeasty flavours with great finesse on the finish.

Cellaring potential: Kaapse Vonkel is ready to drink upon release. But has all the attributes to gain in richness and complexity for 4 to 6 years.

Region: Western Cape

Grapes: Pinot Noir 55%; Chardonnay 43%; Pinot Meunier 2%

Analyses:

Alcohol:	12.53% vol
Residual sugar:	8 g/l
Total Acidity:	7.3 g/l
pH:	3.35

3.3.3. Simonsig - Redhill Pinotage



Wine Style: Full Bodied wood matured Pinotage from a specific vineyard site.

Winemaking: Two days of cold soak is followed by yeast inoculation and a short but intense fermentation in a combination of open top fermenters and rotating tanks. Regular manual punch downs of the cap every 2 to 3 hours in the open top fermenters while the rotating tanks automatically turns every 2 hours in the beginning for optimum fruit and colour extraction. Fermentation temperature peaked at 28°C; Gentle pressing before complete dryness at 3°C. The wine shows deep colour and elegance.

Wood Maturation: 16 months. French Oak 62%, American White Oak 38%. 70% New Wood, 6% 2nd fill, 7% 3rd fill, 17% 4th fill.

Cellaring potential: The gentle tannins provide the structure to age further for 6 to 8 years after vintage.

Region: Stellenbosch

Grapes: 100% pinotage

Analyses:

Alcohol:	14.7% vol
Residual sugar:	2.4 g/l
Total Acidity:	5.6 g/l
pH:	3.63

3.3.4. Simonsig - Cabernet Sauvignon



Wine Style: Full bodied Cabernet Sauvignon

Wine description: Deep garnet red colour. It is a creation of intense blackberry, fynbos, and decadent spices. Succulent fruit fills your pallet, while the closely woven tannin structure adds elegant and finesse to the wine. Lingering notes of lead pencil and cigar box are enhanced by the food friendly dry finish.

Wood Maturation: 23 months in 62% French Oak and 38% American oak. New wood 5%, 2nd fill 50%, 3rd full 28% and 17% other.

Cellaring potential: Soft and perfectly drinkable now but should benefit from further ageing over the next 6 to 8 years.

Region: Stellenbosch

Grapes: Cabernet Sauvignon 100%

Analyses:

Alcohol:	13.94% vol
Residual sugar:	1.9 g/l
Total Acidity:	5.4 g/l
pH:	3.63

All wine information was obtained for the Simonsig website. For further detail on the wines and the Simonsig brand the website can be visited (9).

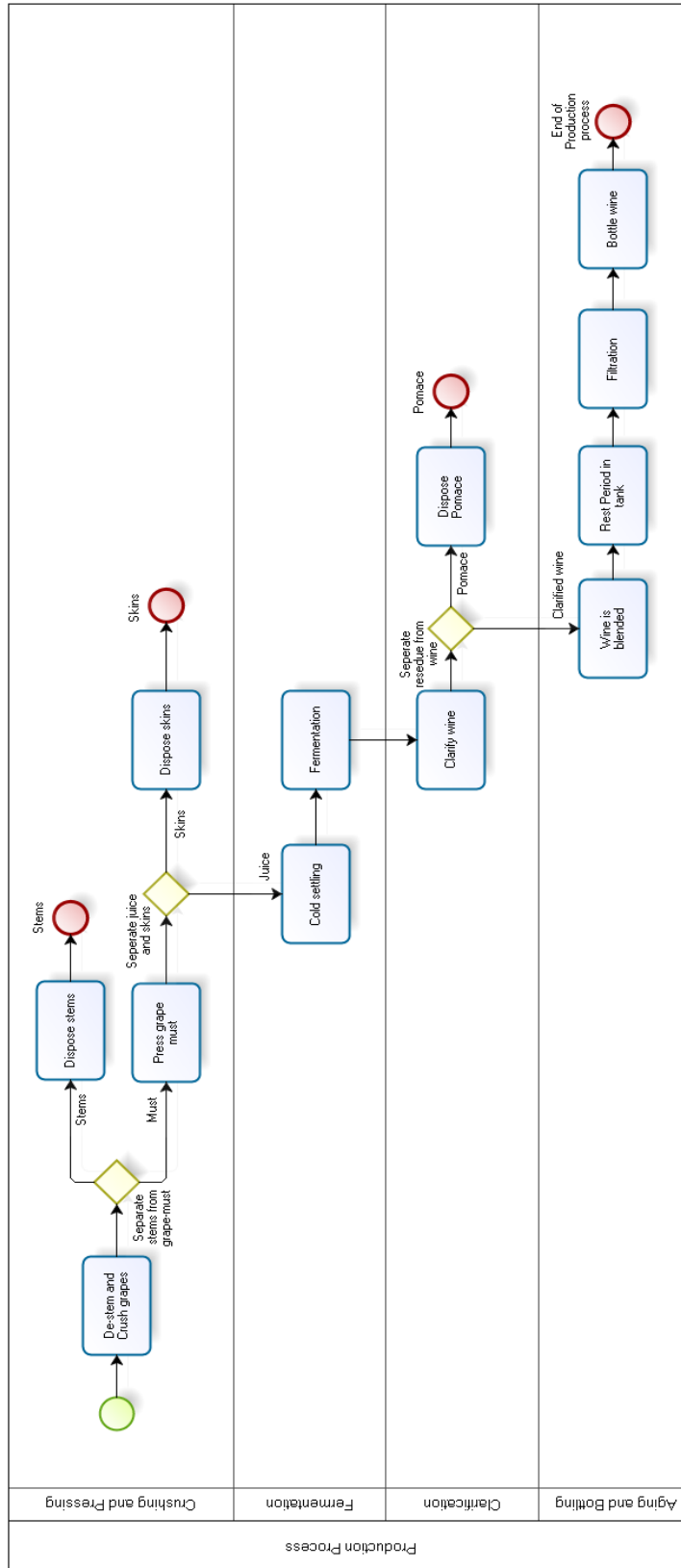
3.4. PREPARATION FOR RE-ENGINEERING CONCLUSION

The Preparation for Re-engineering chapter gives an understanding of the customer's expectations, the motivated objectives for the re-engineering, and what Simonsig expect as a result from the re-engineering. It also describes the characteristics of the four wines under investigation as an initial underpinning for the rest of the project that follows.

4. AS-IS PROCESS ANALYSIS

4.1. WHITE WINE PRODUCTION PROCESS - CHENIN BLANC

Figure 8 - White Wine Production Process



Powered by
bizagi
Modeler

4.1.1. Process Elements

Start of the Chenin Blanc production process.

De-stem and Crush grapes

The "Crusher and De-stemmer" machine is a motor driven machine that crushes the berries and removes the stems in one action. The berries are moved along with a hopper and auger mechanism that serves the machine with berries.

Press grape must

The liquid are separated from the grape solids. A "Press" machine is used for this process. The winemakers carefully measure the liquid-juice to make the necessary adjustments before the fermentation process starts. The winemakers will also add yeast and other additives at this stage.

Fermentation

Fermentation is when the sugar breaks down into alcohol. Once fermentation starts, it will generally continue until all the sugar is transformed into alcohol or until desired sugar levels are reached. Fermentation time varies for each grape-type and batch.

Clarify wine

Once the fermentation process is done, the wine is clarified. The wine is pumped out of the fermentation tanks into clean distilled tanks, leaving the precipitates and solids called pomace behind.

Wine is blended

Up until now, wine from the various regions was kept separate. The winemaker now decides how the wine should be blended for an ideal taste.

Rest Period in tank

The wine is kept in a tank for a rest period to develop full aromas.

Filtration

The wine is filtered before it is bottled.

Bottle wine

Wine is bottled in a bottle plant.

 **End of Production process**

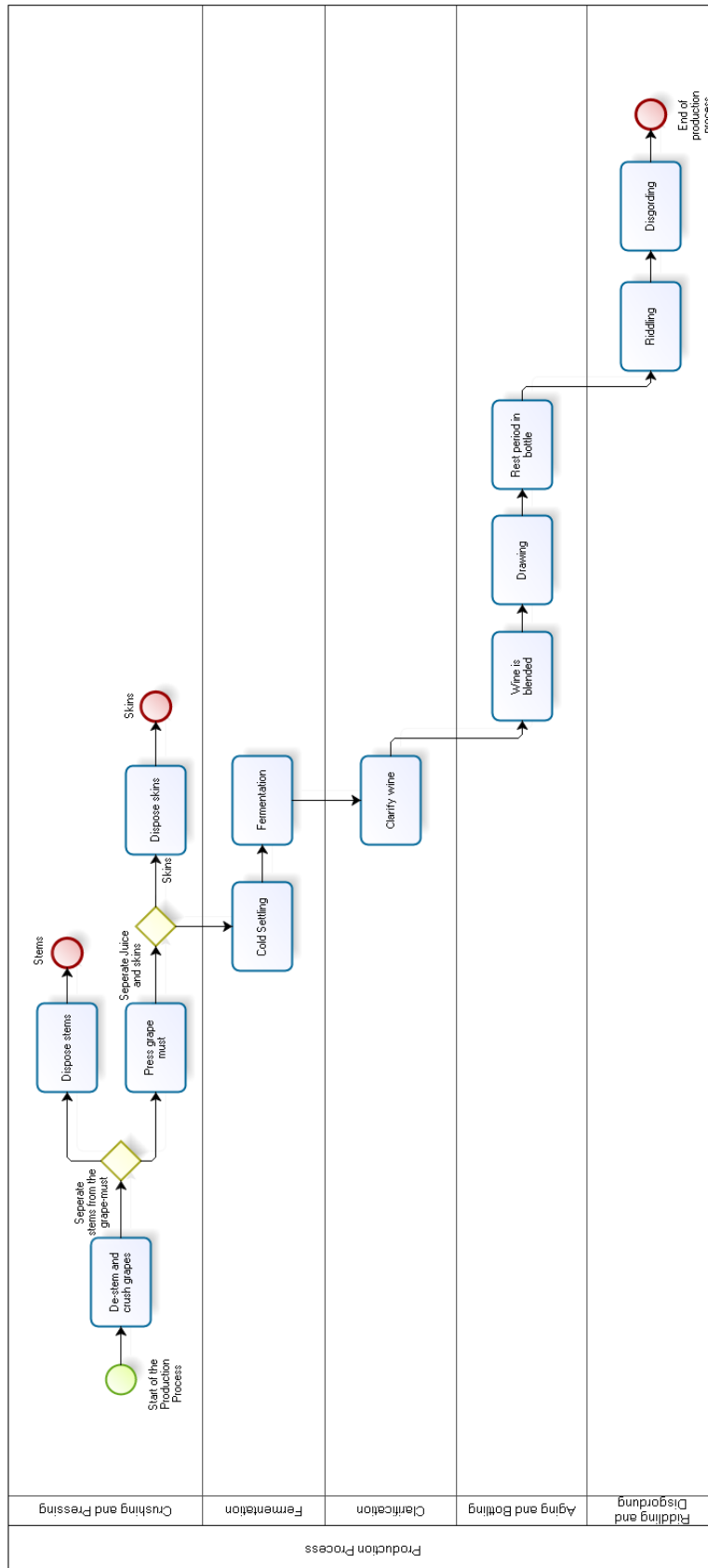
4.1.2. VCOR Market Analysis – Chenin Blanc

Table 10 - VCOR Market Analysis - Chenin Blanc

VCOR Market Execute	Description
Analyse Market	Chenin Blanc wine consumers want a wine that is dry with a touch of sweetness. A wine that is a versatile, every day, easy drinking wine that doesn't need a special occasion to enjoy and goes well with a wide variety of food. The price of the bottle should range between R30.00 and R50.00, but the lower the better.
Analyse Performance	Simonsig Chenin Blanc is a wine with delicious fruity flavours; the straw gold colour has a smooth texture on the finish. Simonsig's Chenin Blanc are performing exceptionally well in the local market. They are selling a good quality wine at a market competitive price. A bottle of Simonsig Chenin Blanc sells for anything between R35.00 to R45.00.
Define Need	There is a market need for the product; therefore it always needs to be fulfilled. There is a need for a constant, reliable, and sufficient supply of Chenin Blanc at a market competitive price.
Architect Solution	In order to ensure an effective production flow, the production process should be examined and optimised, eliminating bottlenecks. The resources need to be analysed in terms of capacity and capability.
Develop Case	It is difficult to predict just when the grapes will be ready for harvest. Therefore, it is often found that all the grapes arrive at the cellar at the same time and then the cellar needs to be capable of processing the grapes in time to ensure that the grapes don't go to waste. It is necessary to evaluate the amount of tonnes of grapes that forms a queue, and how the queue should be eliminated, either by scheduling the available resources more productively, or replacing the old resources with new machinery.
Validate Opportunity	The crusher and de-stem machine is timeworn and can be the cause of a bottleneck in front of the cellar. Optimising the production process will not only benefit the flow of grapes in front of the cellar, but also on the grape vineyards. The grape harvest is sometimes paused on the vineyard because the cellar can't process all the grapes queuing in front of the cellar; the result is that grapes age on the vineyard before it is even harvested. A better production process will result in a better harvest.

4.2. MÉTHODE DE CAP CLASSIQUE PRODUCTION PROCESS – KAAPSE VONKEL

Figure 9 - Méthode de Cap Classique Production Process



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4.2.1. Process Elements

Start of the Kaapse Vonkel Production Process

De-stem and crush grapes

The "Crusher and De-stemmer" machine is a motor driven machine that crushes the berries and removes the stems in one action. The berries are moved along with a hopper and auger mechanism that serves the machine with berries.

Press grape must

The liquid are separated from the grape solids. A "Press" machine is used for this process. The winemakers carefully measure the liquid-juice to make the necessary adjustments before the fermentation process starts. The winemakers will also add yeast and other additives at this stage.

Fermentation

Fermentation is when the sugar breaks down into alcohol. Once fermentation starts, it will generally continue until all the sugar is transformed into alcohol or until desired sugar levels are reached. Fermentation time varies for each grape-type and batch.

Clarify wine

Once the fermentation process is done, the wine is clarified. The wine is pumped out of the fermentation tanks into clean distilled tanks, leaving the precipitates and solids called pomace behind.

Wine is blended

Up until now, wine from the various regions was kept separate. The winemaker now decides how the wine should be blended for an ideal taste.

Drawing

The wine is bottled but only closed with a temporary capsule. When the blends are ready, the wine is bottled and sugar and yeasts are added. The wine undergoes its second fermentation

and becomes sparkling, the bubbles in the sparkling wine is due to the second fermentation. At this stage, the bottle is closed by a temporary capsule called the "bidule".

Rest period in bottle

Champagne, unlike Bordeaux, does not age in your cellar, but in that of the winemaker. The champagne must be kept lying down to develop all of its aromas.

Riddling

This operation is done mechanically, and consists of delicately and gradually turning the bottle from left to right, while at the same time pivoting it slightly so that it ends up upside down. This means that the organic deposits resulting from the fermentation process delicately settle in the neck of the bottle, against the "bidule" (the temporary capsule), while the gas rises to the bottom.

Disgorging

Disgorging removes the deposit that has accumulated in the neck of the bottle during the riddling phase. The bottle neck is dipped into a liquid at -25°C , causing the deposit to freeze. The deposit and the "bidule" are then removed by the pressure of the gas released when the bottles are automatically opened. The last remaining phase involves adding extra brut to fill up the bottle. The final cork is then placed in the bottle; wrapping is then placed over the cork. Then the bottle gets its cork and complete dressing.

End of Production process

4.2.2. VCOR Market Analysis – Kaapse Vonkel

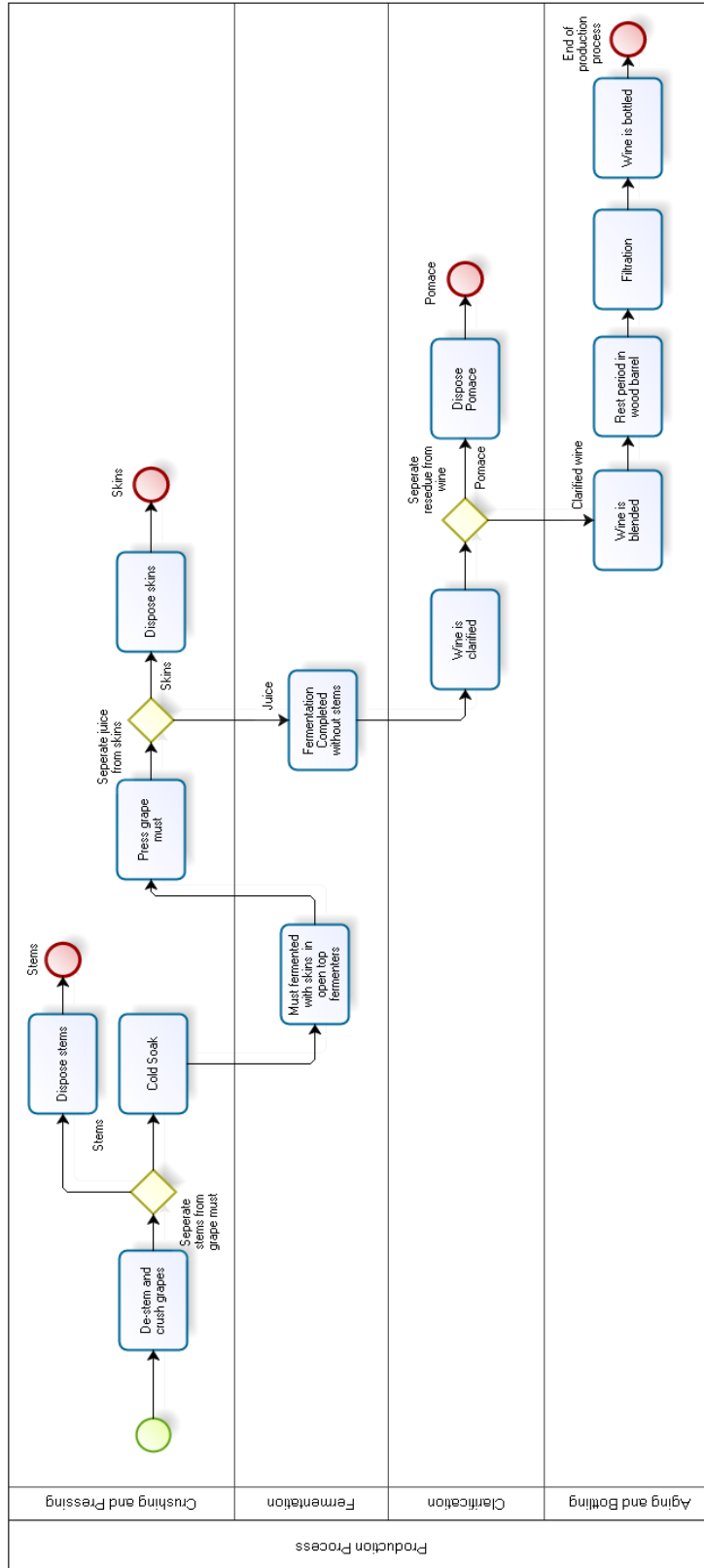
Table 11 - VCOR Market Analysis - Kaapse Vonkel

VCOR Market Execute	Description
Analyse Market	Traditionally, sparkling wine is associated with special occasions, but sparkling wine is being enjoyed as a social drinking wine more often. Especially in warm summer days, consumers enjoy sparkling wine as alternative refreshment. Consumers want a crisp clean, naturally bubbly wine that is easy to drink with a hint of sweetness. Consumers are willing to pay anything between R60.00 to R150.00 for a quality Brut. Again, the lower the price for a quality sparkling wine, the better.
Analyse Performance	Lively energetic mousse forms a crown of bubbles in the glass. On the nose Kaapse Vonkel shows lively floral and Chardonnay citrus fruit which is greatly complimented by red berry flavours from Pinot Noir and Pinot Meunier grapes. The Kaapse Vonkel is performing remarkably well in the local market. Simonsig has renowned reputation for being an industry leader in Cap Classique wine production.
Define Need	There is a market need for the product; therefore it always needs to be fulfilled. There is a need for a reliable and sufficient supply of Kaapse Vonkel at a market competitive price. There is a seasonal trend for sparkling wine; there is also a need to identify the trend and to use the trend as an advantage.
Architect solution	In order to ensure an effective production flow, the production process should be examined and optimised, eliminating bottlenecks. The resources need to be analysed in terms of capacity and capability. The seasonal trend will also be identified to ensure that enough capacity will be designed into the process to ensure that the Kaapse Vonkel will be available at the right time.
Develop Case	The Kaapse Vonkel has a lot of the same problems as the Chenin Blanc, because it also has a high production volume. When the grapes arrive at the cellar in harvest season, the cellar does not always have the capability to process everything in time. It is necessary to evaluate the amount of tonnes of grapes that forms a queue in front of the cellar, and how the queue should be eliminated, either by scheduling the available resources more productively, or replacing the old resources with new machinery. The seasonal trend will be identified in terms of research and a forecast model.
Validate Opportunity	A better production process will increase the harvest. If the sparkling wine consumption trend in South Africa can be identified, the Kaapse Vonkel production scheduling can be managed more productively.

4.3. RED WINE PRODUCTION PROCESS

4.3.1. Redhill Pinotage production process

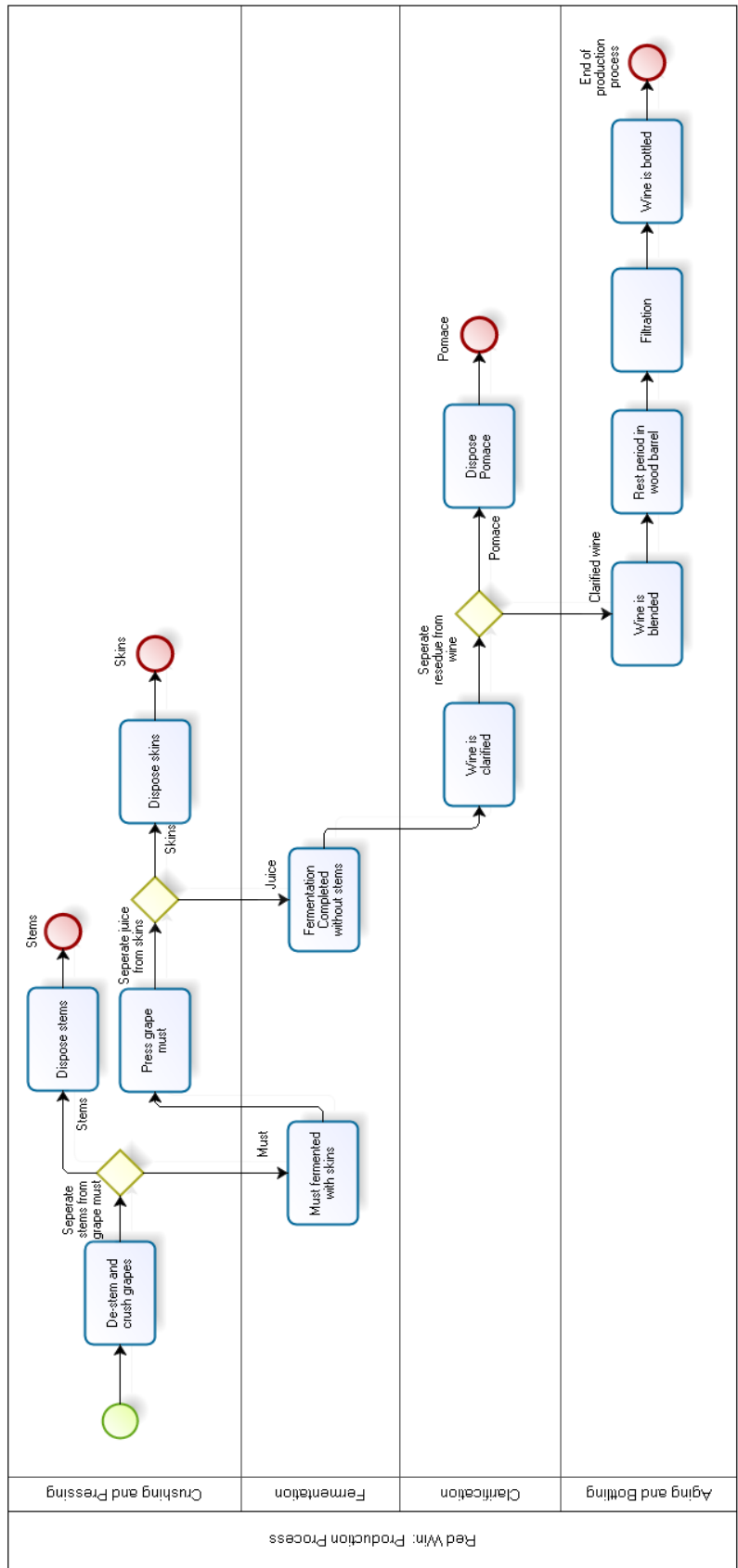
Figure 10 - Redhill Pinotage Production Process



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4.3.2. CABERNET SAUVIGNON PRODUCTION PROCESS

Figure 11 - Cabernet Sauvignon Production Process



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4.3.3. Process Elements

Start of the red wine production process.

De-stem and crush grapes

The "Crusher and De-stemmer" machine is a motor driven machine that crushes the berries and removes the stems in one action. The berries are moved along with a hopper and auger mechanism that serves the machine with berries.

Must fermented with skins

Fermentation is when the sugar breaks down into alcohol. Once fermentation starts, it will generally continue until all the sugar is transformed into alcohol or until desired sugar levels are reached. The fermentation process starts with the skins in the grape must, this gives red wine a rich colour and forms an integral part in the red wine making process.

Cold Soak (Redhill Pinotage)

Before fermentation starts, the grape berries is "cold soaked". Cold soaking extracts the colour and flavour from the skins. Cold soaking must take place in cool temperatures, to prevent early fermentation. The grapes were cold soaked for two days. The Cold Soak step gives the wine a rich fruitful colour and aromas.

Must fermented with skins in open top fermenters (Redhill Pinotage)

Fermentation is when the sugar breaks down into alcohol. Once fermentation starts, it will generally continue until all the sugar is transformed into alcohol or until desired sugar levels are reached. The fermentation process starts with the skins in the grape must, this gives red wine a rich colour and forms an integral part in the red wine making process. The Redhill Pinotage undergoes a short but intense fermentation in an open tank, and every two to three hours the must is manually punched.

Press grape must

The liquid are separated from the grape solids. A "Press" machine is used for this process.

The winemakers carefully measure the liquid-juice to make the necessary adjustments before the fermentation process starts. The winemakers will also add yeast and other additives at this stage.

Fermentation Completed without stems

Fermentation is completed until desired sugar levels are reached.

Wine is clarified

Once the fermentation process is done, the wine is clarified. The wine is pumped out of the fermentation tanks into clean distilled tanks, leaving the precipitates and solids called pomace behind.

Wine is blended

Up until now, wine from the various regions was kept separate. The winemaker now decides how the wine should be blended for an ideal taste.

Rest period in wood barrel

The wine is now kept in wood barrels for a while to allow the wine to develop its aromas.

Filtration

The wine is filtered before it is bottled.

Wine is bottled

Wine is bottled in a bottle plant.

End of production process

4.3.4. VCOR Market Analysis – Redhill Pinotage

Table 12 - VCOR Market Analysis - Redhill Pinotage

VCOR Market Execute	Description
Analyse Market	Pinotage wine is characterised by berry fruit flavours and it has a certain earthiness to the wine. Because the quality of Pinotage wines can vary a lot, consumers are willing to pay a little bit more in return for a quality wine. When consumers purchase a flagship wine from a wine estate, they are willing to pay for an expensive bottle, because the wine would be of the best quality. A pricy bottle of wine won't be for everyday drinking purposes and will only be enjoyed on special occasions. The average market price for a flagship wine varies between R200.00 to R1000.00 per bottle.
Analyse Performance	The Redhill Pinotage is one Simonsig's prestige wines. The wine is very well-known to wine enthusiasts and have received numerous awards around the globe. It is quite an expensive wine with an average price of about R250.00 per bottle. It can't be purchased at any liquor store and can only be consumed at certain selected restaurants and liquor stores.
Define need	Production volumes for Redhill Pinotage, in accordance to the production volumes for Chenin Blanc and Kaapse Vonkel, are low. Therefore, the need lies in the branding of the product. It is an exceptionally good wine, but it does not consider the casual wine consumer. The Redhill Pinotage needs to be exposed to a wider market channel to enlarge the customer range.
Architect Solution	Different market channels in South Africa need to be investigated. A summary of the increased market opportunities have to be delivered to Simonsig.
Develop Case	An in depth investigation will be conducted into the wine market channels by means of conducting interviews along the supply chains and using benchmarking as a tool to examine what competitors are doing. Distribute the wine through online sales.
Validate Opportunity	The Redhill Pinotage is one of Simonsig's flagship wines; therefore the revenue per bottle is high. If the Redhill Pinotage sales can increase it will have a noteworthy impact on total profits.

4.3.5. VCOR Market Analysis – Cabernet Sauvignon

Table 13 - VCOR Market Analysis - Cabernet Sauvignon

VCOR Market Execute	Description
Analyse Market	Cabernet Sauvignon is a very bold and assertive wine. Various types of Cabernet Sauvignon wines are available, ranging from easy drinkable everyday enjoy wine, to full bodied, rich in its flavours, firm wines that can age for a long period. Although traditionally Cabernet Sauvignon is supposed to be a rich dark red wine that can age in the bottle for 8 to 10 years, the consumers now days want to buy a bottle at the supermarket for a cheap price and open that bottle the very same day while enjoying dinner with friends. Therefore consumers tend to buy the less expensive, easier to drink Cabernet Sauvignons. The average price that consumers are willing to pay for a bottle Cabernet Sauvignon ranges from R60.00 to R100.00. But the lower the better.
Analyse Performance	Simonsig is not known as a Cabernet Sauvignon wine producing farm, and its Cabernet Sauvignon is not performing as desired in the Local market. Simonsig Cabernet Sauvignon has a deep garnet red colour. It is a creation of intense blackberry, fynbos, and decadent spices. Traditionally, the wine is perfect, but the local consumer is not choosing it as a brand of choice. A bottle of Simonsig Cabernet Sauvignon can be purchased for R75.00 which is a market competitive price, but the branding of the product is not desired.
Define need	The Cabernet Sauvignon is not performing as desired in the local market which resulted in high inventory levels. There is a need to drastically reduce the Cabernet Sauvignon inventory levels. Cabernet Sauvignon production processes have been halted until inventory levels can be reduced, therefore there is a need to improve the branding of the product and market channels of the product.
Architect solution	There are a few options that can be considered to reduce the inventory levels. The first is to identify a new market for the wine. Secondly, the incentive that the wine rep receives can be increased, giving the sales team motivation to sell the product. Thirdly, make a drastic reduction of the selling price of the wine, to ensure that the wine is cheaper in the super markets etc. And lastly, if the high inventory levels are only a burden, as a last result the inventory could be destroyed.
Develop case	In order to solve the branding issue of the Cabernet Sauvignon, interviews need to be conducted throughout the supply chain and benchmarking will be used as a tool to examine what competitors are doing right.

Validate Opportunity	High inventory levels have a direct impact on revenue. Storage costs increases, the inventory experience deterioration and obsolescence, there are shifts in demand and the products might not sell. Therefore the inventory levels should be drastically reduced.
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4.4. SIMONSIG DISTRIBUTION PROCESS

Simonsig does not distribute their own wines. Simonsig make use of an outsource distributor to do distribution. Meridian Wine Merchants is responsible for Simonsig’s distribution, marketing and brand positioning. Simonsig is one of Meridian Wines “longitude” customers; a longitude customer is a customer that requires allocation control and very specific brand positioning in specific sales channels. Meridian wines offer temperature controlled distribution.

Meridian Wine Merchants also distributes various wine farms products, such as Beyerskloof, Buitenverwachting, Diemersdal, Leopard’s Leap, Zevenwacht, Ernie Els and more. Proofing that Meridian wine is one of the best wine distributors in the country.

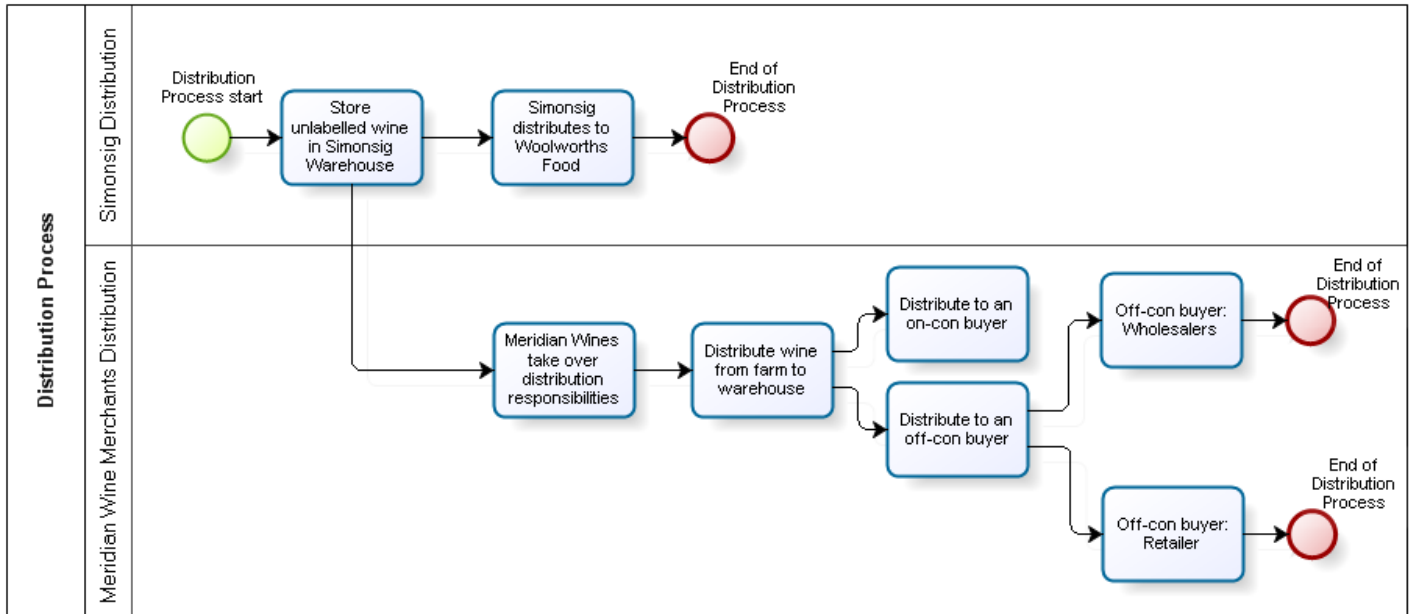
Meridian Wine Merchants have distribution warehouses in Johannesburg (Gauteng), Cape Town (Western Cape), Durban (Kwazulu Natal), and George (Western Cape).

There are various categories to which wine is delivered; wine is either delivered to an off-con buyer or an on-con buyer. An on-con buyer is an on the premises buyer, this include all restaurants. An off-con buyer are categorised in two; the first is wholesalers, which include Makro, Wal-Mart, Trade centre, Solly Kramer and Ultra wholesalers; the second off-con buyer are the retailer group which include Pick and Pay, Shoprite Checkers, and Spar. Part of Meridian Wine Merchants agreement to contract is that they will distribute to both on-con and off-con buyers.

Meridian wine takes an incentive of 31%.

4.4.1. Simonsig Distribution Process

Figure 12 – Simonsig Distribution Process



4.4.2. Process Elements

 **Distribution Process start**

 **Store unlabelled wine in Simonsig Warehouse**

Simonsig has three warehouses; two warehouses on the farm just outside Stellenbosch, and one warehouse in Stellenbosch. The warehouse next to the cellar, which is the 'Simonsig de Hoop' store, stores the labelled wine bottles that are ready for distribution; the labelling plant is also on the farm in close proximity to the 'de Hoop' store.

The other store on the farm, which is the 'Pruim' store, and the warehouses in Stellenbosch, which is a rental store, are used for the unlabelled bottles of wine. Unlabelled bottles of wine have the opportunity to further age in the bottle. If an order is placed for the wine, or if it is necessary to have buffer stock of labelled wines, the bottles will be transported from the

unlabelled wine bottles warehouses to the labelling plant and then the labelled bottles will be stored in the 'de Hoop' warehouse ready for distribution.

Simonsig distributes to Woolworths Food

Simonsig has a contract with Woolworths Food. Simonsig distribute directly to Woolworths Food.

Meridian Wines take over distribution responsibilities

Meridian Wine Merchants is responsible for Simonsig's distribution, marketing and brand positioning.

Distribute wine from farm to warehouse

Meridian Wine Merchants collects the wine from the various wine farms and distribute the wine to one of their warehouses. Meridian Wines have four warehouses situated in Cape Town, Johannesburg, Durban, and the Garden Route. From these warehouses they further distribute the wines.

Distribute to an on-con buyer

An on-con buyer is an 'on the premises' buyer, this include all restaurants, hotels, bars etc.

Distribute to an off-con buyer

Off-con buyers are categorized in two, the first is wholesalers, and the second is retailers.

Off-con buyer: Wholesalers

Wholesalers include: Makro, Wal-Mart, Trade Centre, Solly Kramer, and Ultra Wholesalers.

Off-con buyer: Retailer

Retailers include: Pick and Pay, Shoprite Checkers, and Spar.

End of Distribution Process

4.5. SIMONSIG BRANDING

Branding is the manner in which a company sell their products to the public. Consumers can connect with the specific image or idea that a company sells. The reputation of a company relies on the company brand, and therefore branding plays an important part in a company’s position in the market.

Simonsig is all about branding. They market their products as being of the utmost quality and sell their products accordingly. Simonsig is a known brand in the Local and International markets and carry a good reputation. Simonsig produces 21 different wines under three brands. First they have the ‘Stellenbosch’ brand, and then they have the ‘Simonsig’ brand, and thirdly the “Adelberg’ brand.

The Stellenbosch Brand

The Stellenbosch brand represents Simonsig’s flagship wines. These wines have a certain prestige and finesse. The Stellenbosch branding also differ from the other wines, the bottles are taller, with black and gold detail. There are currently six wines the Stellenbosch brand. The red wines are: Tiara; Redhill; Merindol Syrah; and Frans Malan Reserve. The white wines are: Chenin Avec Chêne; and Aurum Chardonnay. Simonsig does not produce large volumes of these wines and therefore they are generally more expensive. The ‘Stellenbosch’ brand can only be purchased directly from the farm, in the on-con market at hand-picked restaurants and hotels, and in exclusive wine and spirits retailers.



The Simonsig Brand

The Simonsig brand represents Simonsig’s commercial wines. These wines are also of a very good quality, but it is more for mass consumption. The branding of these wines has a white label with gold finishing. The Simonsig brand is the largest brand of the three with thirteen wines in the brand. The red wines are: Cabernet Sauvignon Labyrinth, The SMV, Mr. Borio’s Shiraz, Pinotage, and Cabernet Sauvignon Shiraz. The white wines are: Chenin Blanc, Vin de Liza, Sunbird Sauvignon Blanc, Gewürztaminer, and Chardonnay. Lastly the Méthode de Cap Classique wines are: Kaapse Vonkel Brut, Kaapse Vonkel Brut Rosé, and Cuveé Royale. The Simonsig brand wines are sold at market competitive prices or just above the market average prices and it can be purchased at On-con and Off-con buyers, most like to find these wines in Makro liquor stores, Checkers, Spar Tops, and Pick and Pay.



The Adelberg Brand

The Adelberg Brand is Simonsig’s cheaper wines. The wine is also intended for mass consumption. The Adelberg brand is cheaper than the other wines. The branding place emphasis on the name Adelberg; has a white label, and black and gold detail. There are only two wines in this brand and that is the Adelberg Sauvignon Blanc (white wine) and the Adelberg Cabernet Sauvignon Shiraz (red wine). It can be purchased at the same retailers as the Simonsig brand and sells at just below market average price.



4.5.1. Simonsig's Brand Positioning and Relationship with Meridian Wine Merchants

In order to depict the relationship between Meridian Wines and Simonsig Figure 13 and Figure 14 shows the various wines that Meridian Wines sell for Simonsig, where Simonsig positioned the wine brand, and in what tier Meridian Wines sell each wine.

Figure 13 - Simonsig's Brand Summary

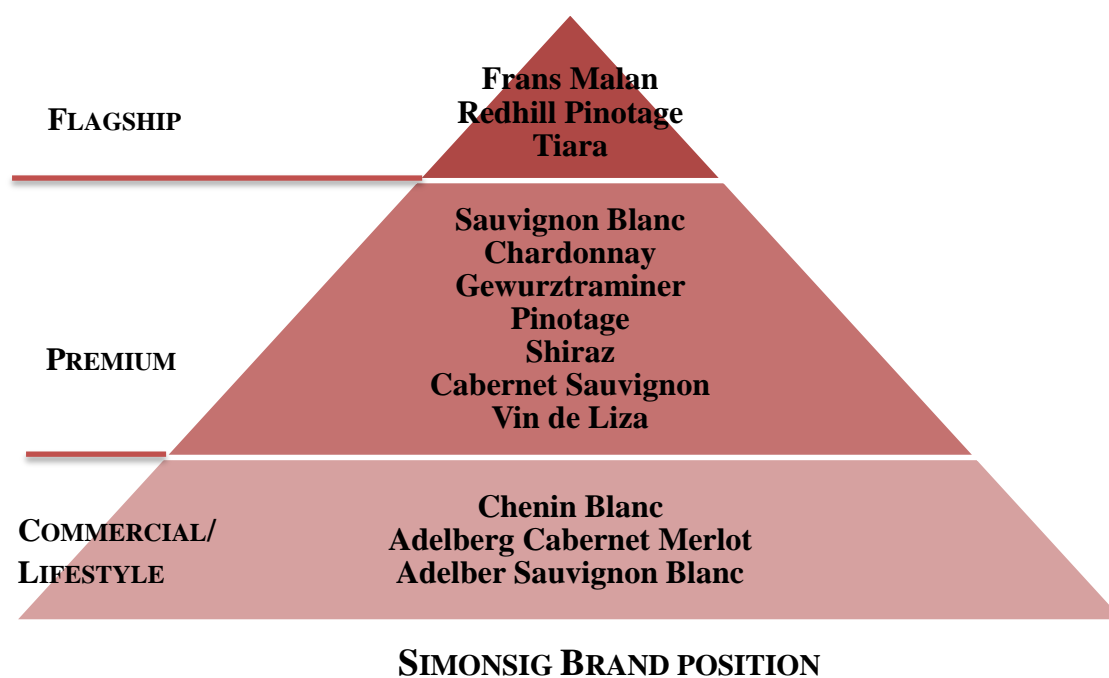
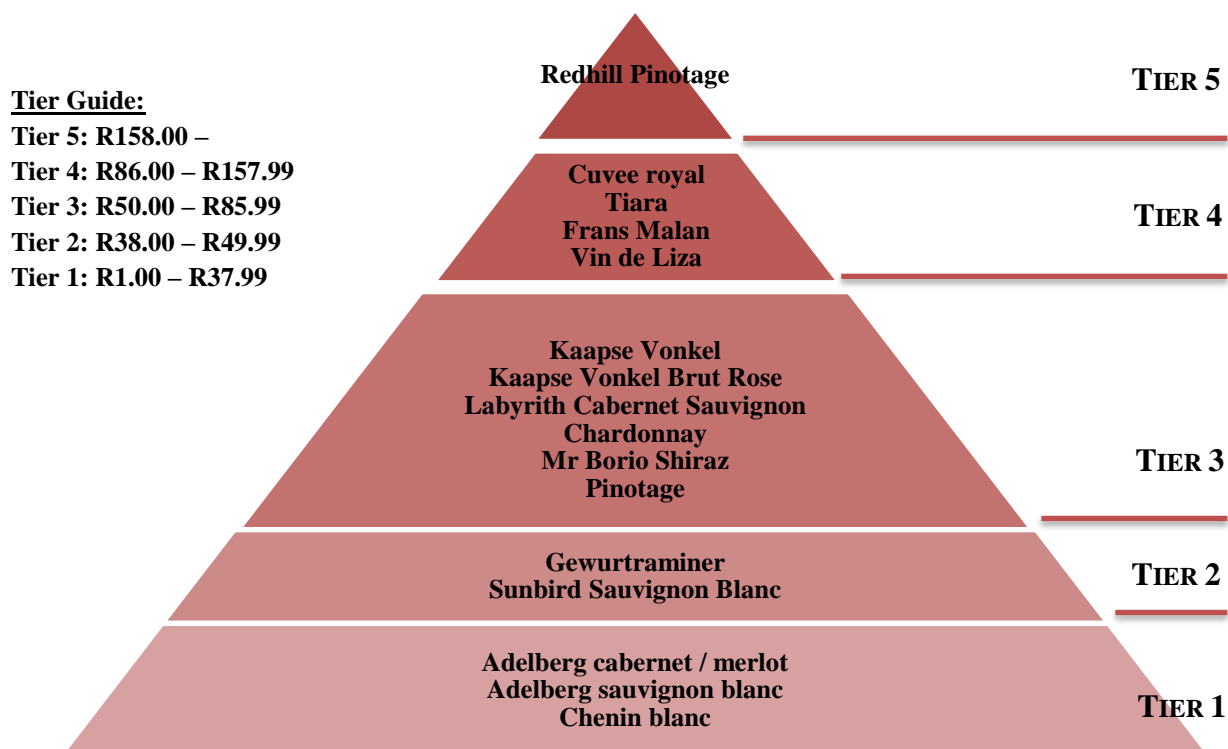


Figure 14 - Simonsig's brand position at Meridian Wines



The hierarchical portrayal of the brand positioning of the various wines in accordance with the price tiers of Meridian wines gives a good understanding on where each wine is positioned in the Local Market and in which category the wine is sold. Table 14 expresses the four wines under investigation, what the retail price is, and in which Meridian Wine tier the wine lies.

Table 14 - Wine Tiers

Wine	Retail Price	Meridian Wine Tier
Chenin Blanc	R37.99	Tier 1
Kaapse Vonkel	R94.99	Tier 3
Redhill Pinotage	R249.00	Tier 5
Cabernet Sauvignon	R94.99	Tier 3

4.5.2. VCOR Brands Analysis

Table 15 - VCOR Brands Analysis

VCOR Brand Execute	Description
Define and Differentiate Brand Requirement	<p>Stellenbosch: The brand should be extremely exclusive, look luxurious and of high quality.</p> <p>Simonsig: The brand should still be classy and elegant; a customer must see quality in the brand.</p> <p>Adelberg: The branding should be cheerful and colourful; complete for everyday enjoy.</p>
Select Market Channels	<p>Stellenbosch: The market channel is elite, opportunity drinking wine – therefore restaurants and hotels, wine collectors.</p> <p>Simonsig: The market channel is accessible, available for mass consumption therefore place focus on retailers and wholesalers. Also channel the restaurant and hotel market.</p> <p>Adelberg: The market channel is focused on mass consumption and everyday drinking, therefore focus on retailers and wholesalers.</p>
Validate Brand	<p>Stellenbosch: The brand is successful, the brand conform to all the brand requirements and is ideal for the selected market channel.</p> <p>Simonsig: The brand is successful, it conforms to brand requirements and the selected market, but the brand is large and can be too expensive for the market.</p> <p>Adelberg: The brand is successful, it conforms to brand requirements and the selected market, but the brand is large and can be too expensive for the market.</p>

The four wines under investigation in the product: Redhill Pinotage is from the Stellenbosch brand, and the Chenin Blanc, Kaapse Vonkel and Cabernet Sauvignon is from the Simonsig brand.

4.6. AS-IS PROCESS ANALYSIS CONCLUSION

The A-Is Process Analysis chapter was conducted to understand the existing processes before Re-engineering can proceed. The Production, Distribution and Branding processes was discussed. The objective of the chapter was to identify anything that hinders the current processes from reaching its goals.

5. DATA ANALYSIS

A Data-Analysis will be conducted to inspect, process, and examine the data of the harvest, blending and bottling statistics.

5.1. HARVEST ANALYSIS

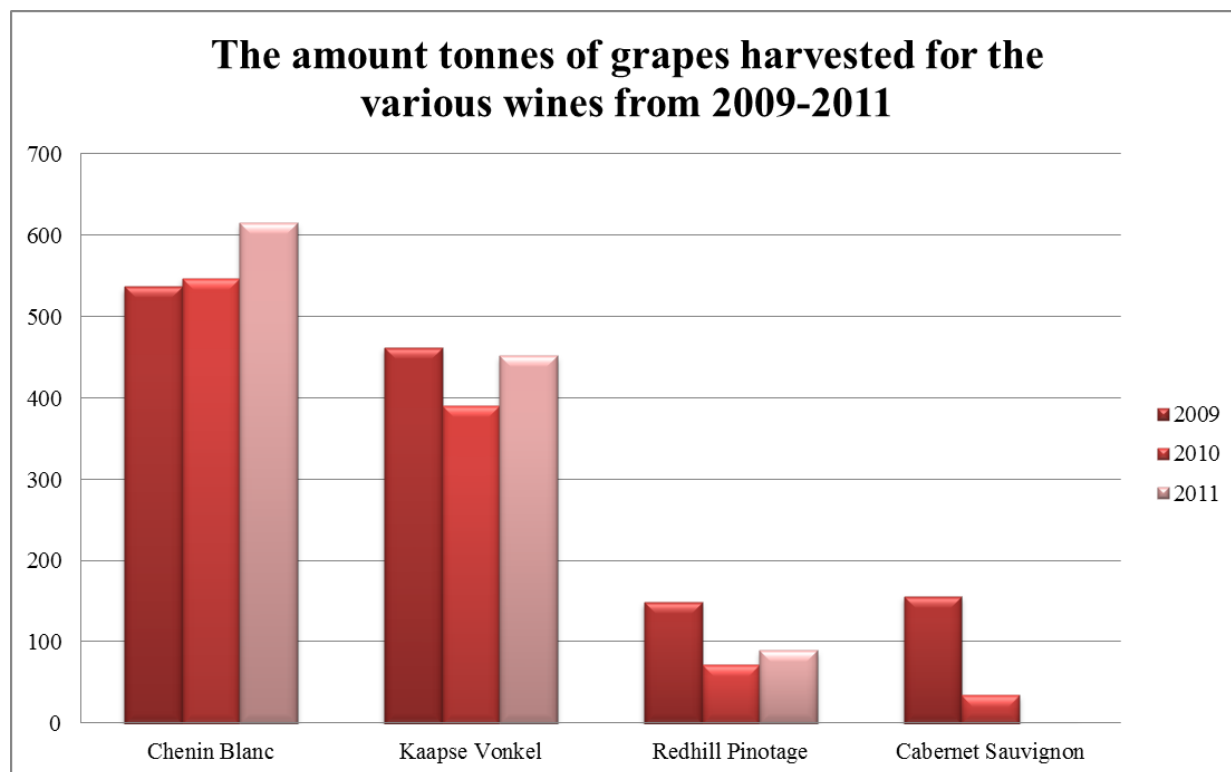
Harvesting grapes is the first step in the wine production process. Come late January to April, when it is time to harvest, the winemakers, vineyard workers and everybody involved in the harvest are facing the busiest time of the year. Together with focusing on managing a successful harvest, the community around the event associates the harvest with romance and festivity. There is a certain grape harvest order; in general the sparkling wine grapes (which are the Chardonnay, Pinot Noir, and Pinot Meunier) will be harvested first, to ensure that the grapes have lower sugar levels. Next in the harvest line would be the white wine grapes (Chenin Blanc). And lastly the red wine grapes will be harvested, because they take a bit longer to develop full maturation. There are two methods to use to harvest grapes; the first is traditional hand harvest, or mechanical harvesting. Simonsig uses the hand harvesting technique. Teams of vineyard workers move swiftly, vine-by-vine, through the vineyard and prudently cutting the clusters with a harvest knife and shear. Workers each have their own picking bin, and when the bins are full, it is dumped in a macro bin on a tractor which will transport the grapes to the cellar. When the grapes are hand-picked it allows for a more precise selection, an experienced crew will sort grapes on the vineyard, the grapes will be in a better condition and protected against oxidation due to damaged skins. With hand-picked grapes, the winemaker has more control of what goes into the crusher and therefore enhances the quality of the wine. To forecast exactly when the grapes are going to be ready for harvest is tricky, the grapes tannin, acid and sugar content are the main determinants on how ripe the grapes actually is.

Simonsig does not grow all the grapes used in their wines on their own grounds. For some of the wines, additional grapes are purchased to ensure enough volume to sustain the market.

The grapes that are used in the four wines under investigation are: Chenin Blanc, for the Chenin Blanc wine; Chardonnay, Pinot Noir, and Pinot Meunier for the Kaapse Vonkel; Pinotage for the Redhill Pinotage; and Cabernet Sauvignon for the Cabernet Sauvignon wine.

The harvest statistics from 2009 until 2011 are:

Figure 15 - The amount of grapes harvested



It is shown in figure 15 that the amount of grapes that was harvested for Chenin Blanc is the most, followed by the Kaapse Vonkel, the Redhill Pinotage, and the Cabernet Sauvignon. The Cabernet Sauvignon harvest has seen an intense decrease since 2009. In 2010 only 35 tonnes were harvested and in 2011, no Cabernet Sauvignon grapes were harvested because no Cabernet Sauvignon wine was produced.

When the grapes are harvested and arrive at the cellar, it immediately has to be processed to ensure that the grapes are not exposed to a lot of oxygen and to ensure the grapes do not go bad. Due to the weather impact on the grapes, it is often found that all the grapes ripen at the same time. When large amount of grapes arrive at the cellar, a queue will form in front of the cellar, waiting on the “Crusher and De-stemmer” machine and the Press machine to process the grapes into a juice and to allow the juice to undergo fermentation.

Recently, Simonsig purchased a new Press machine and this has taken some bearing of the queue and Simonsig have enough tank capacity for fermentation. At the moment the main bottleneck is in front of the “Crusher and De-stemmer” machine.

To further analyse the issue of incoming grapes per day, that forms a queue outside the cellar, data is illustrated in figure 16 and figure 17. The incoming grapes from 2011 for Chenin Blanc and Kaapse Vonkel were drafted in column diagrams to show the amount of tonnes received per day.

Figure 16 - Chenin Blanc received per day

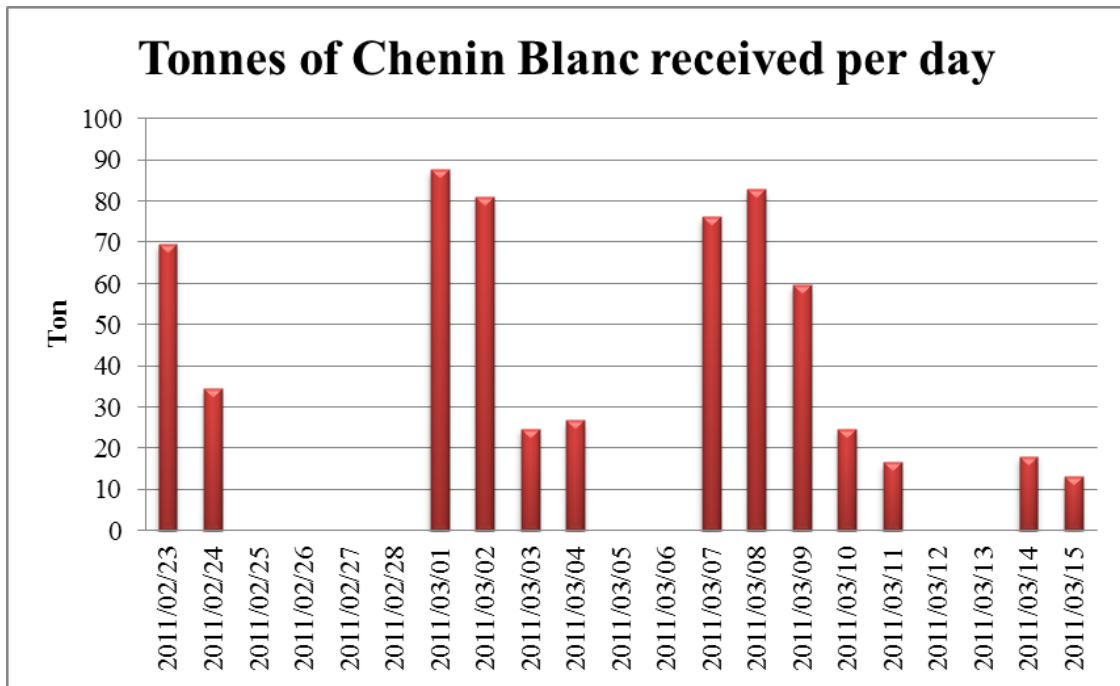
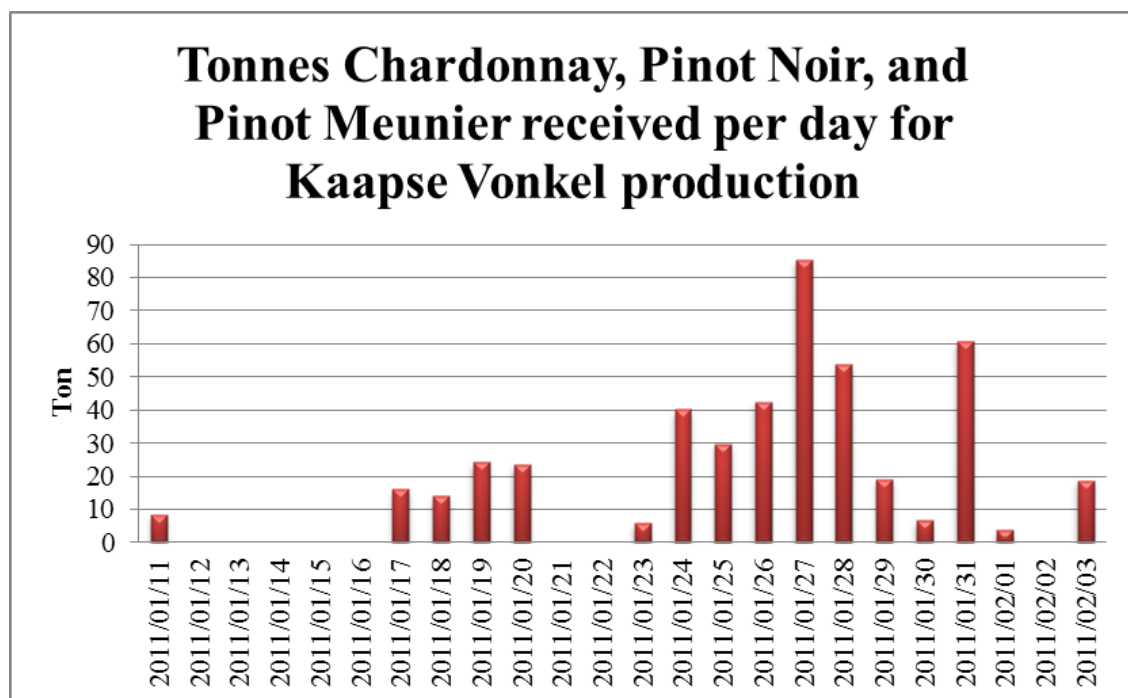


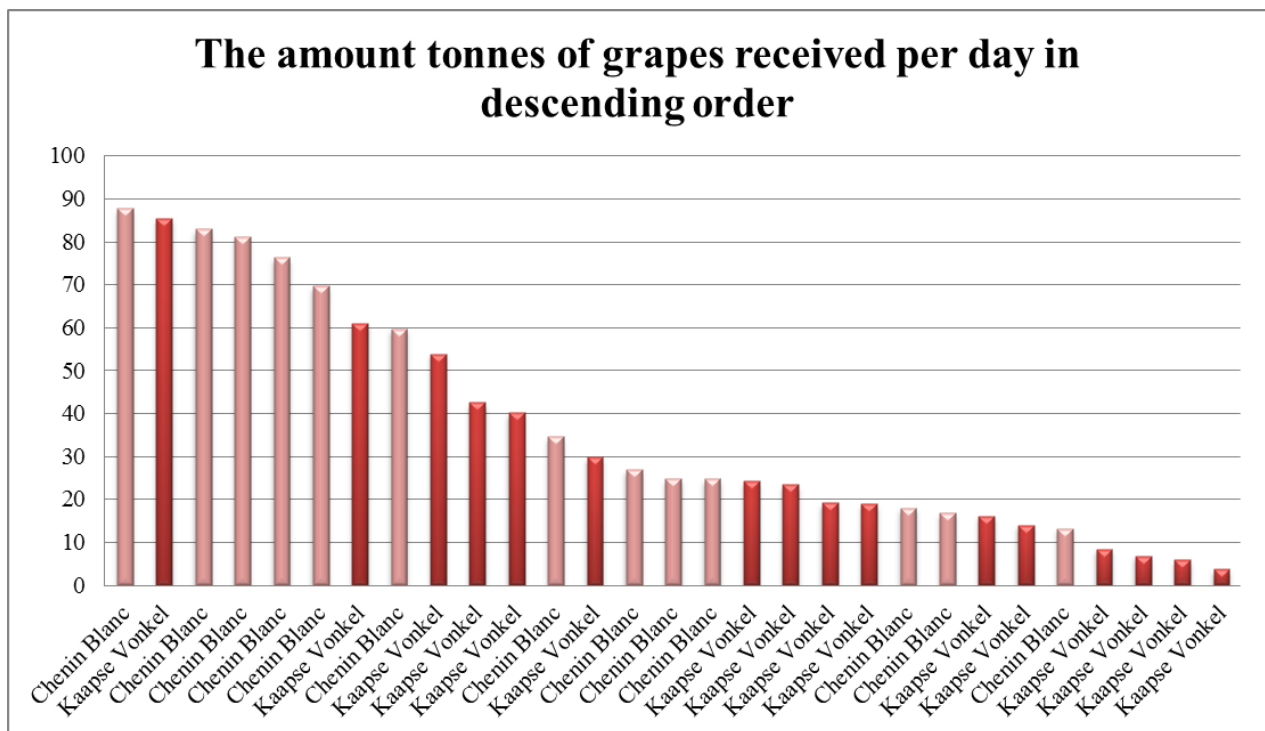
Figure 17 - Kaapse Vonkel received per day



In figure 15 and figure 17 it shows that at times, the cellar receives large amounts of grapes in a day. It also shows how the grapes tend to ripen around the same time and arrives at the cellar as it ripens on the vineyard. When the queue outside the cellar is too long, the harvest will come to a standstill to process the grapes in front of the cellar first, resulting in grapes that over ripen on the vineyards.

In order to fully understand the amount of grapes that the cellar needs to be able to process at certain times figure 18 was created that combines the incoming grapes of Chenin Blanc and Kaapse Vonkel per day.

Figure 18 - Grapes received per day



Although the amount of grapes received per day vary a great deal, the cellar still needs to be capable of processing all the incoming grapes. The incoming grapes can be categorised in three types of groups, the first will be a “heavy traffic day”, second group will be a “medium traffic day”, and the third will be a “light traffic day”.

Table 16- Classification of days

	Amount of grapes (ton)
Heavy traffic day	100 to 70
Medium traffic day	70 to 30
Light traffic day	30 and under

A queuing theory will be conducted on the incoming grapes and the “Crusher and De-stemmer” machines ability to process the grapes for the various above categorised groups:

5.1.1. Queuing Theory analysis of the incoming grapes

Queuing theory is a mathematical approach to the analysis of waiting lines. A queuing theory consists of three main components, which are the origin of the items and the way the items arrive at the system, the service resource, and the condition of the items leaving the system.

The arrival of grapes at the cellar and being processed by the “Crusher and De-stemmer” machine will follow the M/M/1 queuing system. The arrival and service time will be negatively exponentially distributed (poisson processes), the system also only involve one server.

The arrival of grapes at the cellar can be described as a Poisson process because it is a birth-death process. The time between arrivals events follow an exponential distribution with parameter λ ; the inter-arrival times are also interdependent. The service rate is also exponentially distributed with parameter μ .

The queuing discipline used is “first-in-first-out”.

The Service Rate: The “Crusher and De-stemmer” machine has the capacity to process 20tonnes/hour. But over the years the machine is worn-out; consequently it never reaches the initial capacity. It is found that the machine can process the grapes at an approximate rate of 130 tonnes per day of 12 hours. Thus the actual service rate is: **$\mu = 10.83 \text{ ton/hour}$**

The Arrival Rate: Three different arrival rates will be analysed, which are the “heavy-traffic day” arrival rate, the “medium-traffic day” arrival rate, and the “light-traffic day arrival rate. In each category, as seen in table 14, the largest amount in the category will be used. The

grapes will arrive at the cellar 8:00 until 20.00. Thus the grapes will arrive for 12 hours at the cellar. The various arrival rates are:

Heavy traffic day	$\lambda = 8.33$ per hour
Medium traffic day	$\lambda = 5.83$ per hour
Light traffic day	$\lambda = 2.5$ per hour

The average amount tonnes of grapes waiting in the queue for service:

$$Lq = \frac{\lambda^2}{\mu(\mu - \lambda)}$$

Heavy traffic day queuing analysis:

$$Lq = \frac{8.33^2}{10.83(10.83 - 8.33)}$$

$$Lq = 2.56 \text{ Ton/hour}$$

Medium traffic day queuing analysis:

$$Lq = \frac{5.83^2}{10.83(10.83 - 5.83)}$$

$$Lq = 0.63 \text{ Ton/hour}$$

Light traffic day queuing analysis:

$$Lq = \frac{2.5^2}{10.83(10.83 - 2.5)}$$

$$Lq = 0.07 \text{ Ton/hour}$$

The average tonnes of grapes in the system:

$$L = Lq + \frac{\lambda}{\mu}$$

Heavy traffic day queuing analysis:

$$L = 2.56 + \frac{8.33}{10.83}$$

$$L = 3.33 \text{ Ton/hour}$$

Medium traffic day queuing analysis:

$$L = 0.63 + \frac{5.83}{10.83}$$

$$L = 1.17 \text{ Ton/hour}$$

Light traffic day queuing analysis:

$$L = 0.07 + \frac{2.5}{10.83}$$

$$L = 0.3 \text{ Ton/hour}$$

The average time the grapes wait in line:

$$Wq = \frac{Lq}{\lambda}$$

Heavy traffic day queuing analysis:

$$Wq = \frac{2.56}{8.33}$$

$$Wq = 18 \text{ min}$$

Medium traffic day queuing analysis:

$$Wq = \frac{0.63}{5.83}$$

$$Wq = 6 \text{ min}$$

Light traffic day queuing analysis:

$$Wq = \frac{0.07}{2.5}$$

$$Wq = 2 \text{ min}$$

Average time grapes spend in the system:

$$W = Wq + \frac{1}{\mu}$$

Heavy traffic day queuing analysis:

$$W = 0.3 + \frac{1}{10.83}$$

$$W = 24 \text{ min}$$

Medium traffic day queuing analysis:

$$W = 0.108 + \frac{1}{10.83}$$

$$W = 12 \text{ min}$$

Light traffic day queuing analysis:

$$W = 0.028 + \frac{1}{10.83}$$

$$W = 7 \text{ min}$$

The longest length of that the queue will reach is 2.56 ton/hour, and the longest time that the grapes will wait in the queue is 18min. This is not too objectionable, but the queue length and waiting time should be kept as low as possible. To improve these results a few different alternatives can be considered, such as purchasing an extra machine or to schedule the “Crusher and De-stemmer” machine differently, for example working double shifts etc.

5.2. BLENDING AND BOTTLING ANALYSIS

From the vineyard to the bottle

To measure the complete harvest outcome, it is useful to compare the amount of litres wine bottled to the tonnes of grapes harvested. In other words, how many grapes go into a bottle wine? This will also be a true reflection of the production costs.

There are a lot of variables to consider before analysing the outcome of the statistics, such as the type of grape variety; how the climate was during the year – did the grapes swell because of the rain, or did it dry out because of a drought; what was the pressing technique – was it whole cluster, gentle pressing or were products used to break down the skins; when were the grapes pressed – pre-fermentation (white grapes), post-fermentation (red-grapes); harvest method; and whether the grapes were de-stemmed and crushed or crushed and not de-stemmed . All these variables need to be taken into consideration.

The average conversion of grapes into wine fluctuates between 775 litres (very high) and 650 litres (low). In Méthode de Cap Classique wine the conversion of grapes into wine will only be approximately 512.5 litres per ton (Skelton, 2007, p.5, 29). Figure 19 and Figure 20 shows Simonsig’s conversion statistics and compares these conversion statistics to the industry norms.

Figure 19- Litres per Tonne Blended

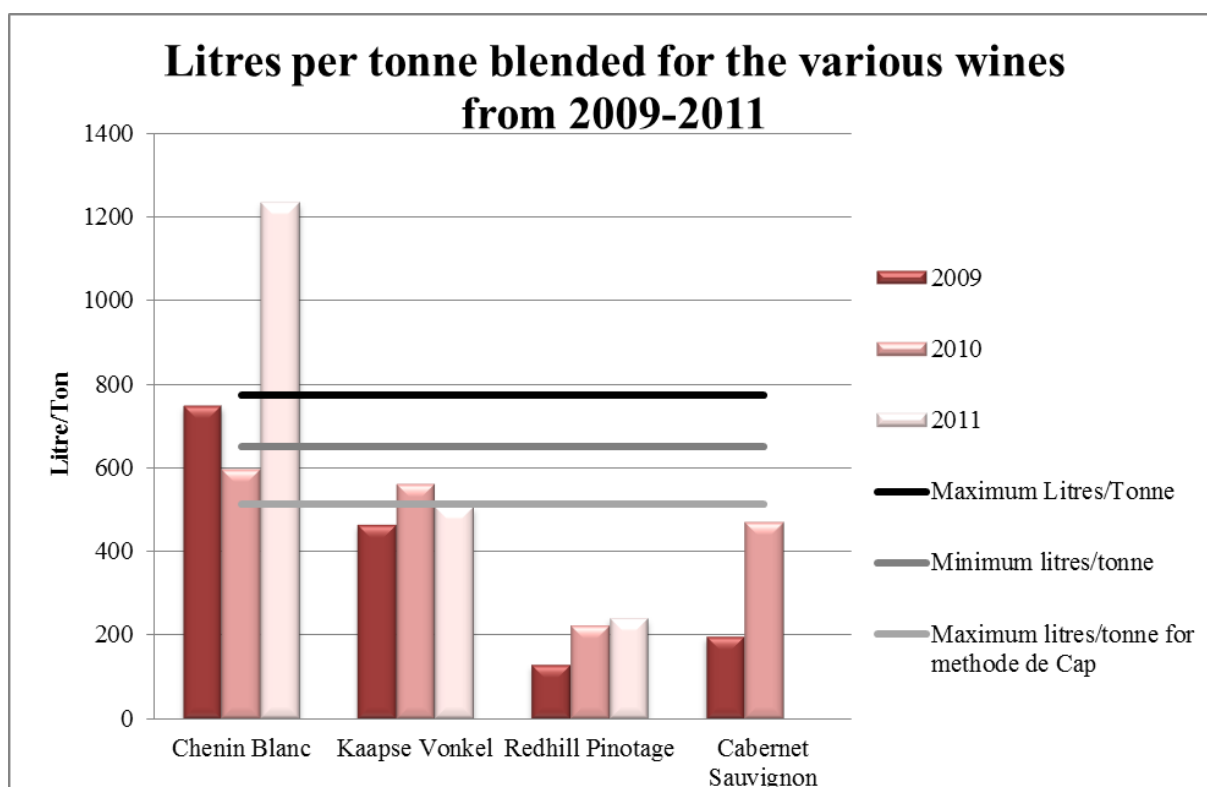


Figure 19 shows the amount of litres per tonne blended for the various wines. It also compares the amount of litres per tonne that Simonsig blended to the industry norm.

Figure 20 - Litres per Tonne Bottled

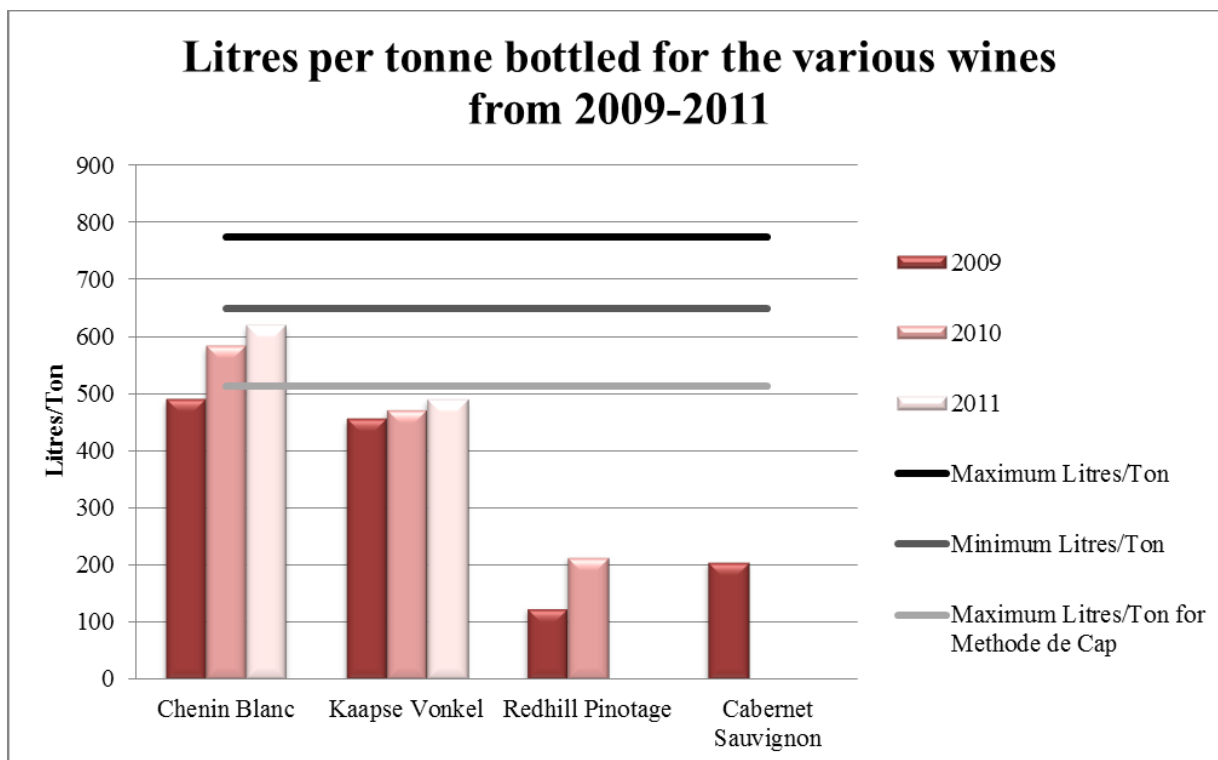


Figure 20 shows the amount of litres per tonne bottled for the various wines, and it also compares the amount of litres per tonne that Simonsig bottled to the industry norm.

The Chenin Blanc and Kaapse Vonkel vary approximately around the industry norms when looking at the amount of litres per tonne blended (figure 19). The Redhill Pinotage and Cabernet Sauvignon is not within reach of the industry norm, lower conversions can be expected for red wines.

When looking at the litres per tonne bottled (figure 20), again the Chenin Blanc and Kaapse Vonkel is the nearest to the industry norm, but not within range. The Redhill Pinotage and Cabernet Sauvignon are not within reach of the industry norm. The amount of litres blended will be compared to the amount of litres bottled later in this chapter.

As discussed earlier, there are various factors to be taken into consideration when analysing the blending and bottling statistics. Variables that can have an influence on the conversion statistics:

- **Type of Grape variety:**

Chenin Blanc: Chenin Blanc is an energetic plant that is inclined to over-grow when it's not pruned properly. South Africa and especially Stellenbosch have very fertile terrior (soils) and can yield very high crops.

Kaapse Vonkel (Chardonnay, Pinot Noir, and Pinot Meunier): Chardonnay adjusts well in any type of climate and therefore delivers strong and constant yields. Pinot Noir is a black grape, and it is very dependable on the climate and terrior. Pinot Meunier is an adaptable wine and performs well in all terriors – Stellenbosch is a prime region and the grapes should perform well.

Pinotage: Pinotage is a South African grape and South Africa grows the vast majority of Pinotage in the world. The grape has a good harvest yield, but is very dependent on the wine making method to result in an enjoyable wine.

Cabernet Sauvignon: Cabernet Sauvignon has the ability to grow in different climates and is one of the world's most renowned grape varieties; it is adaptable and easy to grow.

- **Climate:**

Stellenbosch weather is ideal for wine growing; Stellenbosch has Mediterranean weather with a quintessential terrior. Summers are dry and hot, and winters are cold and rainy. During grape vine growing is the best time to have rainfall. When less rain falls the grapes does not grow into full potential and is less juicy. But too much rain isn't good for the grapes as well.

- **Green Pruning:**

Simonsig practises intensive vineyard management to enhance the quality of their grapes. The young grapes are pruned to remove the inferior bunches at an early stage. Allowing well-formed bunches to grow into their full potential. This technique is called Green Pruning. Not all wine farms practise green pruning and this could have an influence in the industry norm values.

- **Harvest Method:**

Simonsig uses the hand harvesting technique. Teams of vineyard workers move swiftly, vine-by-vine, through the vineyard and prudently cutting the clusters with a harvest knife and shear. Hand harvesting should yield better litres per tonne than machine harvesting because the grapes were handled with better care.

- **Pressing Technique:**

Simonsig recently purchased a new pressing machine and make use of high technology pressing.

- **Fermentation:**

Chenin Blanc and Kaapse Vonkel fermentation is post-pressing. Post pressing fermentation yields much higher litres per tonnes that pre-pressing fermentation (red wines).

The Redhill Pinotage and Cabernet Sauvignon undergo post-pressing fermentation. The Redhill Pinotage in particular commences open tank fermentation, a lot of vapour escapes when a grape is fermented in an open tank – this is known as the “angels share”.

The white and red grape fermentation tanks differ, but when the traffic load on the white grape tanks are too high, Simonsig use the red grape fermentation tanks for the white grapes. Red grapes cannot undergo fermentation in a white grape tank, but the traffic is not as high on the fermentation tanks for red grapes because the volumes are lower. Therefore it is believed that the fermentation tanks are not a problem.

- **Queues:**

On a high-traffic day (refer to the queuing theory on 72) of incoming grapes in front of the cellar, the tractors with grapes queue in front of the cellar. The grapes can potentially stand in the sun for hours and this may cause some loss in grapes and grape quality.

Factors influencing Simonsig’s amount of litres per tonne statistics:

The various factors were each assessed according to an influence scale. One is a low influence, two a moderate influence, and three a high influence. As seen below in table 17.

Table 17 - Various factors influencing the conversion statistics

Variable to be considered	Influence Rating	Reason for Influence Rating on the amount of litres wine per tonne grapes.
Grape Variety	2	The influence that the type of grape variety has on the amount of litres per tonne converted is not a problem that can be addressed. All the grape varieties grow exceptionally well in the Stellenbosch area, which is the most ideal area for wine growing in South Africa. Pinotage grapes are the only grapes that may cause an issue with lost volumes due to the wine maker's recipe. But this will not be addressed because the wine maker's recipe will not be changed.
Climate	2	Climate has a big influence on the growth rate of grapes. Stellenbosch has the correct weather to grow grapes in. However the rainfall from a specific year can have a big influence on the amounts of litres per tonne conversions. In a year of drought, the conversion will be low. In a good rainfall year the conversion will be high because the grape berries were able to grow into their full potential.
Green Pruning	1	Green Pruning have a positive influence on the amount of litres per tonne conversions, because the early removal of weaker bunches allows the strong bunches to grow full juicy berries. Green Pruning have a big influence on the amount of tonnes harvested per hectare, it will be lower than farms that doesn't practise green pruning. But, Green Pruning will have a positive effect on the amount of litres per tonne conversions. It also enhances the quality of the grapes.
Harvest Method	1	Hand harvesting will not have a negative effect on the amount of litres per tonne conversions. It will in fact increase the amount of litres per tonne conversions.
Pressing Technique	1	Simonsig recently purchased a new pressing machine and make use of high technology pressing. Therefore the pressing technique does not have a strong influence on the statistics.
Fermentation	2	The difference between pre-fermentation and post-fermentation pressing is visible, post-fermentation pressing deliver noticeably lower amounts of litres per tonne conversions. Again this issue will not be addressed, because this is the wine maker's preference in recipe.
Queues	3	The queues that form outside the winery and on the vineyard during harvesting may not be the main reason for low conversion rates of litres per tonnes, but it is the only influence where definite improvements can be made.

Another raising concern is the clear difference in litres blended per year and litres bottled per year. The Redhill Pinotage and Cabernet Sauvignon statistics will not give a clear understanding as to how many litres per wine goes to waste between the blending and bottling because the wines from the previous year or two get bottled.

A comparison will be made between the litres of wine blended and the litres of wine bottled for the Chenin Blanc and the Kaapse Vonkel. This will determine what the percentage of waste is and if there is reason for concern.

Figure 21 - Percentage of Chenin Blanc Blended after Bottled

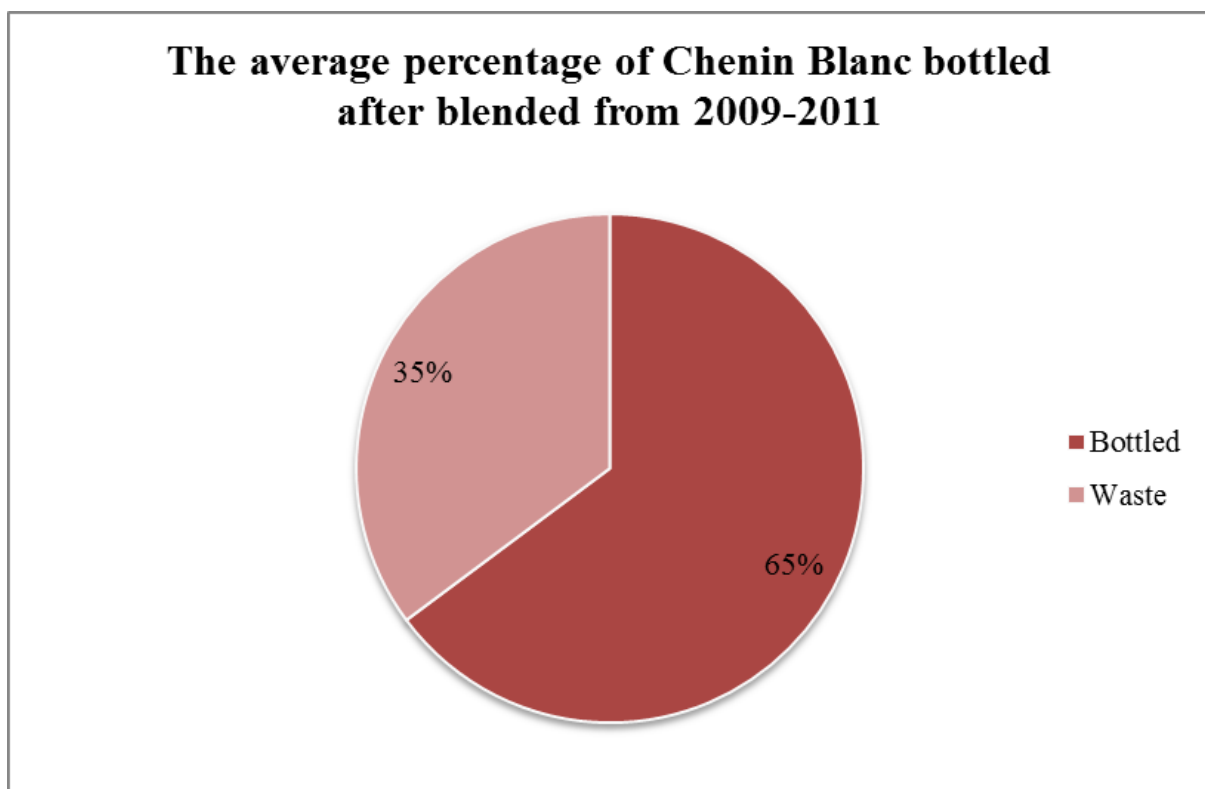


Figure 21 demonstrates the loss in Chenin Blanc after it is blended, at first sight the 35% is extremely high, but after investigation it has a valid reason for being thus high. The Chenin Blanc did not completely go to waste; the 35% extra was used in the exclusive Chenin Blanc-Pinotage wine for Woolworths. Unfortunately the amount of litres Chenin Blanc used for the Chenin Blanc-Pinotage was not released for this project, but if it is a raising concern for Simonsig, the problem will be addressed after the project is completed.

In Figure 22 below the Kaapse Vonkel statistics shows a much more accurate comparison.

Figure 22 - The percentage Kaapse Vonkel Blended after Bottled

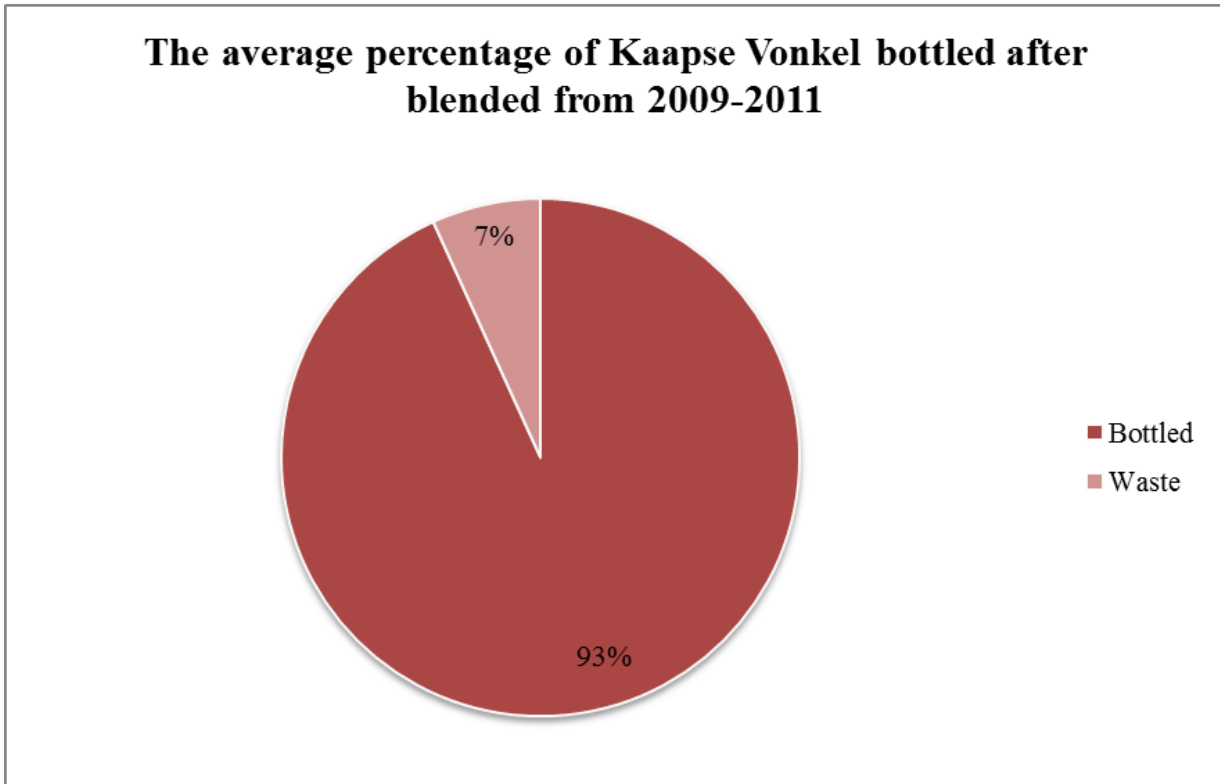


Figure 22 shows the percentage of waste between the blending and the bottling of Kaapse Vonkel. The 7% waste is not a lot to be concerned about. During the Méthode de Cap Classique production process, the wine undergoes a sub-process disgorging (discussed on page 52). Disgorging removes the deposit that has accumulated in the neck of the bottle during the riddling phase. The bottle neck is dipped into a liquid at -25°C, causing the deposit to freeze. The deposit and the "bidule" are then removed by the pressure of the gas released when the bottles are automatically opened. The disgorging process is a valid assumption to why there is 7% waste.

5.3. DATA ANALYSIS CONCLUSION

The Data Analysis chapter showed that there is a definite queue outside the cellar during harvest time, because the Crusher and De-stemmer machine does not have the capacity to service the queue during ‘high traffic’ days. The data also showed that there is a key problem regarding the Cabernet Sauvignon, in 2011 no tonnes of Cabernet Sauvignon grapes harvested were used for the Cabernet Sauvignon wine, and the last time that Simonsig bottled Cabernet Sauvignon was in 2009. The amount tonnes of grapes that Simonsig convert into litres wine vary a lot and can be improved to the industry norm, and that the queue outside the cellar may be a main cause of low conversion rates.

6. BENCHMARKING

Benchmarking is a consistent on-going process of evaluating process performance against world class process performances known as “best practices”. The aim of benchmarking is to understand and evaluate Simonsig’s current position in relation to the “best practices” and to identify potential areas of improvement. The first step in the Benchmarking will be to identify Simonsig’s main competition. Thereafter, Simonsig’s production, distribution, and branding processes will be compared to the competitors’ processes. Meridian Wines, Simonsig’s marketer and distributor will also be compared to other competitors and to the option of Simonsig doing their own marketing and distribution. The outcome of the benchmarking will show Simonsig’s competitive advantages and potential areas for improvement.

6.1. COMPETITORS

Chenin Blanc Competitors

Chenin Blanc accounts for approximately 20% of South Africa’s total wine production. The competition amongst wineries for Chenin Blanc production is immense. Three types of Chenin Blanc are produced in South Africa, the first is un-oaked and fresh dry Chenin Blanc; the second is oaked dry Chenin Blanc; and the third is sweet Chenin Blanc. Simonsig produces type 1, un-oaked and fresh dry Chenin Blanc (25).

The leading Chenin Blanc producers in South Africa are: Kleine Zalze Cellar Selection; Perdeberg; Avondale; Raats; and Van Loveren;.

Kaapse Vonkel Competitors

Méthode Cap Classique wine is naturally sparkling wine made in South Africa. Simonsig Kaapse Vonkel is South Africa’s first Méthode Cap Classique wine and is well known sparkling wine in the South African wine Industry.

The leading Sparkling Wine (Méthode de Cap Classique) producers in South Africa are: Graham Beck; JC le Roux; and Bon Courage.

Redhill Pinotage Competitors

Pinotage is an exclusively South African grape variety, it is a fairly new wine making style and winemakers are still experiencing with the wine. The Simonsig Redhill Pinotage has ranked in numerous prices and is one of Simonsig's flagship wines.

The leading Pinotage producers in South Africa are: Beyerskloof, Kanonkop, and Spier.

Cabernet Sauvignon Competitors

Simonsig Cabernet Sauvignon is not performing as desired in the market. Benchmarking is therefore a crucial phase for the improvement of the Cabernet Sauvignon position in the market.

The leading Cabernet Sauvignon producers in South Africa are: Perdeberg, Douglas Green, Zevenwacht, and Van Loveren.

Meridian Wine Merchants Competitors

There are numerous wine distributors and marketers in South Africa; together with wine farms that does their own distribution and marketing. There is an active and healthy competition amongst wine distributors in South Africa. Meridian Wine Merchants is one of the most renowned distributors in South Africa.

The leading Wine Distributors in South Africa are: The Wine Call Centre, VDP Distributors, PB Liquor Merchants, and the wine farms that are private producers.

6.2. BEST PRACTISES

After investigation the four wine producers that are Simonsig's main competition are Graham Beck, Beyerskloof, Perdeberg, and Val de Vie. The distribution main competitor is The Wine Call Centre. The Production, Distribution, and Branding processes of these four farms will be investigated to identify 'best practices' and The Wine Call Centre will be evaluated for 'best practices'.

Graham Beck Wine Estate (30)

Table 18 - Graham Beck Wine Estate - Best Practices

Best Practice Process	Method
Production	Graham Beck is known as a Méthode de Cap Classique producer, with seven sparkling wines. Graham Beck also produces numerous red and white wines. Their cellar is very new, and they make use of new equipment. Graham Beck focus on getting the basics right the first time and therefore invested a lot in their cellar.
Distribution	Online Ordering Graham Beck is in charge of their own distribution.
Branding	Graham Beck usually uses bronze, gold, black and silver colours. Their wines are associated by the name Graham Beck printed on the labels and their sign. The branding is always elegant and sophisticated. Graham Beck is involved in a lot of wine festivals. Graham Beck has an excellent website that is user friendly and promotes the brand very well.

Beyerskloof Wine Estate (31)

Table 19 – Beyerskloof Wine Estate - Best Practices

Best Practice Process	Method
Production	Beyerskloof only focus on producing Pinotage wine, and at the moment is Beyerskloof is the industry pioneer in Pinotage wine production.
Distribution	Meridian Wine Merchants
Branding	Beyerskloof brand their wines exceptionally well. Beyerskloof has a very dynamic and fun restaurant that sells their famous Pinotage burgers. Together with eating a Pinotage burger the customers buys a glass/bottle Pinotage wine. Tourists from around the world visit the restaurant to eat the infamous burgers. The restaurant's prices are also very reasonable. Koos Kombuis (Afrikaans singer) is the spokesperson for Beyerskloof. Beyerskloof doesn't have a very presentable and user friendly website. Beyerskloof make use of black and red colours.

Perdeberg Winery (32)

Table 20 - Perdeberg Winery - Best Practices

Best Practice Process	Method
Production	Perdeberg Winery is a Producer Cellar, which means they generally can produce greater volumes of wine at lower costs. Therefore their wines are less expensive. Perdeberg uses screw caps on most of their bottles, they focus on keeping the price per bottle wine as low as possible; but still, Perdeberg produces wine of good quality.
Distribution	PB Liquor Merchants
Branding	Perdeberg branding is cheap but still presentable, fun, and enjoyable. Perdeberg make use of black, green, and gold colours.

Val de Vie Wine Estate (33)

Table 21 - Val de Vie Wine Estate - Best Practices

Best Practice Process	Method
Production	Val de Vie produces very exclusive wines.
Distribution	Val de Vie distribute their own wines through Online Sales and through distributing their own wines to numerous retailers, wholesalers, restaurant and hotel groups.
Branding	Val de Vie is pioneers in branding their products. Ryk Neethling (the former South African swimmer) is their marketing spokesperson – who wouldn't want to buy wine from Ryk Neethling? Val de Vie has a Polo court and a Polo Club restaurant. Customers can enjoy a glass of Val de Vie wine, while eating and spectating a game of Polo. Val de Vie sells “the good life”.

The Wine Call Centre

Table 22 - The Wine Call Centre - Best Practices

Best Practice Process	Method
Distribution Process	The Wine Call Centre distribute to eleven distribution destinations in South Africa. Their distribution costs are very competitive and reasonable. The Wine Call Centre delivers effectively and at reasonable prices.
Marketing Process	The Wine call Centre does not offer brand marketing but do offer telesales.

6.3. SWOT ANALYSIS

SWOT Analysis is a strategic development method used in business development projects. It is used to evaluate a business's Strengths, Weaknesses, Opportunities, and Threats. Strengths are characteristics that a product/business poses that put it in a competitive advantage. Weaknesses are characteristics that a product/business poses that put it in a competitive disadvantage. Opportunities are external likelihoods that can potentially increase the product/business competitiveness. Threats are external likelihoods than can potentially threaten the product/business competitiveness. A SWOT Analysis was performed separately on each wine under investigation and on Meridian Wine Distributors.

Chenin Blanc – SWOT Analysis:

Table 23 - Chenin Blanc SWOT Analysis

<p>Strengths:</p> <ul style="list-style-type: none"> • Good quality and good tasting wine • Market Competitive Price • Various Awards since 2005 • Good reputation • Effective branding 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • The bottle only contains 750 ml. • Production volumes may be too low.
<p>Opportunities:</p> <ul style="list-style-type: none"> • To dominate the Chenin Blanc market • To increase production to satisfy growing demand • Increase production volumes 	<p>Threats:</p> <ul style="list-style-type: none"> • Low prices will result in increased sales but can threaten Simonsig's reputation. • High prices may result in high inventory levels.

Kaapse Vonkel– SWOT Analysis:

Table 24 - Kaapse Vonkel SWOT Analysis

<p>Strengths:</p> <ul style="list-style-type: none"> • First Méthode de Cap producer in South Africa. • Good quality and good tasting wine. • Exceptionally good reputation. • Various awards since 2000. • Effective branding. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Sparkling wine (Méthode de Cap Classique) is a seasonal wine and is mostly enjoyed in the summer. • Demand planning.
<p>Opportunities:</p> <ul style="list-style-type: none"> • To dominate the Méthode de Cap market. • To increase production to satisfy growing demand. • Increase production volumes. 	<p>Threats:</p> <ul style="list-style-type: none"> • Competitors promoting their wines more effective. • Competitors only focussing on Méthode de Cap production.

Redhill Pinotage– SWOT Analysis:

Table 25 - Redhill SWOT Analysis

<p>Strengths:</p> <ul style="list-style-type: none"> • Wine recipe is excellent. • Outstanding quality wine. • Exceptionally good reputation. • Various awards since 2001. • Excellent branding. • Known as one of the best Pinotage wines in South Africa. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Not readily available. • Great loss in volumes during production.
<p>Opportunities:</p> <ul style="list-style-type: none"> • Broaden the market channels and make the wine more available to consumers. • While still maintaining brand reputation and requirements. 	<p>Threats:</p> <ul style="list-style-type: none"> • Wines of equal quality and competitive reputation that is more readily available and accessible.

Cabernet Sauvignon– SWOT Analysis:

Table 26 - Cabernet Sauvignon SWOT Analysis

<p>Strengths:</p> <ul style="list-style-type: none"> • Good quality wine. • Traditional Cabernet Sauvignon taste. • Wine is immediately available to sell. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Simonsig is not known as a Cabernet Sauvignon producer. • The branding is very classy and elegant, but its appearance may not be very approachable for the everyday drinking consumer.
<p>Opportunities:</p> <ul style="list-style-type: none"> • There is an opportunity to re-launch the wine with a new and fun label. • There is an opportunity to sell the wine to a new wine drinking market. 	<p>Threats:</p> <ul style="list-style-type: none"> • Price sensitivity, a high price per bottle wine won't sell in the local market and a low price can threaten Simonsig's reputation.

Meridian Wine Merchants – SWOT Analysis

Table 27 - Meridian Wines SWOT Analysis

<p>Strengths:</p> <ul style="list-style-type: none"> • Attention in wine sales • Distribute wine through South Africa • Brand marketing • Temperature controlled distribution 	<p>Weaknesses:</p> <ul style="list-style-type: none"> • Meridian Wines is in charge of distribution for 32 wine farms. • Attention divided between the various wine farms.
<p>Opportunities:</p> <ul style="list-style-type: none"> • There is an opportunity to strengthen the relationship between Meridian Wines and Simonsig, for better collaborated success. 	<p>Threats:</p> <ul style="list-style-type: none"> • Other wine farms may have a problem with new relationship, and question the equality amongst farms.

6.4. BENCHMARKING CONCLUSION

The Benchmarking Chapter shows that there is a key opportunity for Simonsig to improve Branding and Sales methods. The Industry ‘best practices’ use social figures in the South African market to promote and market brands. It also shows that Meridian Wine Merchants is the best distributors in South Africa.

7. TO-BE PROCESS DESIGN

In the Preparation for Re-engineering (Chapter 3) vision and mission statements were drafted for the Business Optimisation. The aim of To-Be process designs is to produce one or more options to the current circumstances that will satisfy the planned goals of the business. The To-Be process improvements will be presented; an Activity Based Costing will be performed on each; a trade-off analysis will be performed to ensure that the best possible To-Be models are selected for implementation; the results of the To-Be Process Design chapter will be presented in a Business Case.

7.1. PROPOSED IMPROVEMENTS

After an in-depth investigation in Chapter 4 – As-Is Process Analysis, Chapter 5 – Data Analysis, and Chapter 6 – Benchmarking; potential areas for improvement can be summarised as follow:

7.1.1. First Potential Improvement – Production Process

The production process can be improved. As seen in table 17 on page 80 and in the queuing theory on page 72 the major root of this problem is the queue that forms outside the cellar during harvest season. It is also very clear in Chapter 5 that the Chenin Blanc and Kaapse Vonkel are two of Simonsig's top producing wines, and in Chapter 4 and Chapter 6 it also comes to attention that the Chenin Blanc and Kaapse Vonkel is Simonsig's top selling wines. Therefore there is a great opportunity for improvement in the Production Process.

Aim of Improvement:

The first goal of improving the production process is to increase the amount of litres wine produced per tonne grapes that enters the production process; the ideal is to improve the amount of litres per tonne converted to 775 litres per tonne. The second goal is to reduce the production cost as a result of an improved process; and the third goal is to increase the amount of tonnes that the production process can run to increase production volumes.

The purpose of a Crusher and De-stemmer machine should be not to crush the grapes but only to de-stem the berries. Therefore the aim is to improve the technology in the cellar that will improve the production statistics.

Method of Improvement:

Replace the old Crusher and De-stemmer machine with a new Crusher and De-stemmer machine with a greater capacity, or to add an extra Crusher and De-stemmer machine to the production line with the same capacity.

7.1.2. Second Potential Improvement – Branding and Sales

In Chapters 4, 5, and 6 it stated that the Cabernet Sauvignon is not performing as desired in the Local Market. In Chapter 4, the conclusion was that there is nothing wrong with the Production Process for Cabernet Sauvignon, it might have been too good and resulted in misalignment between the sales team and the production team, now there are high levels of inventory that are not selling as desired. Chapter 5 showed that the Cabernet Sauvignon's performance is decreasing, even so that no Cabernet Sauvignon was produced in 2011 and no Cabernet Sauvignon was bottled for 2010 and 2011. In Chapter 4 the current branding for the Cabernet Sauvignon showed that it is very classy and elegant, but the recent trends in the Wine Market show that a red wine consumer prefers a more every day, casual drinking wine. The current branding doesn't sell the bottle as informal and easy to drink. In Chapter 6 it is clear that the Local Market doesn't associate Simonsig as a Cabernet Sauvignon producing farm. With high inventory levels, there is an opportunity to improve the Cabernet Sauvignon sales and image in the Local Market.

Aim of Improvement:

The aim of the improvement is to increase Cabernet Sauvignon sales, to reduce the inventory levels, and to expand the Simonsig's competitiveness in the Local Market.

Method of Improvement:

The first part of the proposed improvement will be to redesign the branding for a Cabernet Sauvignon bottle as a Limited Edition bottle. The branding will be fun, enjoyable, but still

elegant enough to be a ‘premium’ wine. The branding will be a little smaller than the current branding to reduce the unit cost per bottle.

The second part of the improvement will be a complete re-launch of the Cabernet Sauvignon. The re-launch must be in collaboration with a vibrant restaurant that is franchised over South Africa.

Together with the re-launch, a new face will be added to the Simonsig brand, a spokesperson will represent the brand. The ‘social figure’ should be someone a large audience can relate to and he/she should be well-known and very active on social networks and in social appearances.

Lastly, the incentive for Meridian Wine Merchants should be slightly increased for the Cabernet Sauvignon to serve as motivation for the Meridian Wine agents to boost wine sales, while still selling at the same retailers price and not doing any harm to the brand.

7.1.3. Third Potential Improvement – Distribution

Throughout the project, Meridian Wine Merchants were questioned to determine whether they are the best solution for the distribution and marketing of Simonsig’s wines. Various other options were considered such as switching to another outsourcing distributor, or Simonsig distributing their own wines. The conclusion was made to stay with Meridian Wine Merchants. Some of the advantages of outsourcing the distribution are that the distribution process and responsibility for Simonsig are remarkably lower; therefore distribution process costs are also lower. Simonsig’s cost of handling is much lower. In Chapter 6 page 90 it shows that the advantages of outsourcing outweigh the disadvantages. There is however improvements that Simonsig can collaborate into their distribution process.

Aim of Improvement:

The aim is to improve Simonsig’s distribution and sales independently from Meridian Wines.

Method of Improvement:

Update Simonsig’s website to include online sales and distribution. Together with marketing Simonsig wines individually form Meridian Wines at various retailers and wholesalers to include Simonsig wines in their collections.

7.2. VALIDATE IMPROVEMENTS

The validation of improvements will indicate the potential outcomes of the improvements; the validation will also indicate the magnitude of the improvement, and whether these improvements will be sufficient alternatives that will conform to the project mission and vision.

7.2.1. Validate Production Process Improvement

The proposed method of improvement was to replace the old Crusher and De-stemmer machine with a new Crusher and De-stemmer machine with a greater capacity, or to add an extra Crusher and De-stemmer machine to the production line with the same capacity.

Each of the proposed process improvements will be examined through a queuing theory that will be performed on the incoming grapes and the new “Crusher and De-stemmer” machines.

7.2.1.1. Queuing Theory analysis of the incoming grapes

First Proposal: replace the old Crusher and De-stemmer machine with a new Crusher and De-stemmer machine with a greater capacity.

The arrival of grapes at the cellar and being processed by the “Crusher and De-stemmer” machine will follow the M/M/1 queuing system. The arrival and service time will be negatively exponentially distributed (poison processes), the system also only involve one server.

The Service Rate: The “Crusher and De-stemmer” machine will have an improved capacity to process 20tonnes/hour. Hence the service rate: $\mu = 20 \text{ ton/hour}$

The Arrival Rate: The arrival rate will be taken as a “Heavy traffic day” (as seen in chapter 5 page 73). The arrival rate: $\lambda = 8.33 \text{ ton/hour}$

The expected amount tonnes of grapes waiting in the queue for services:

$$Lq = \frac{\lambda^2}{\mu(\mu - \lambda)}$$

$$Lq = \frac{8.33^2}{20(20 - 8.33)}$$

$$Lq = 0.3 \text{ Ton/hour}$$

Improvement percentage from As-Is process = 88%

The expected tonnes of grapes in the system:

$$L = Lq + \frac{\lambda}{\mu}$$

$$L = 0.3 + \frac{8.33}{20}$$

$$L = 0.72 \text{ Ton/hour}$$

Improvement percentage from As-Is process = 78%

The expected time the grapes wait in line:

$$Wq = \frac{Lq}{\lambda}$$

$$Wq = \frac{0.3}{8.33}$$

$$Wq = 2 \text{ min}$$

Improvement percentage from As-Is process = 89%

Expected time grapes spend in the system:

$$W = Wq + \frac{1}{\mu}$$

$$W = 0.036 + \frac{1}{20}$$

$$W = 5 \text{ min}$$

Improvement percentage from As-Is process = 79%

Second Proposal: Add an extra Crusher and De-stemmer machine to the production line with the same capacity.

The arrival of grapes at the cellar and being processed by the “Crusher and De-stemmer” machine will follow the M/M/S queuing system. The inter arrival times are exponential (with rate λ), service times are exponential (with rate μ), there is a single line of grapes (in ton) waiting to be served at one of the s parallel servers.

The Service Rate: The service rate will be the same as the current service rate. Therefore the service rate; $\mu = 11 \text{ ton/hour}$. See chapter 5 page 72 for As-Is service rate.

The Arrival Rate: The arrival rate will be taken as a “Heavy traffic day” (as seen in chapter 5 page 73). The arrival rate: $\lambda = 8.33 \text{ ton/hour}$

The number of servers: The number of “Crusher and De-stemmer” machines will be two machines of the same capacity. Therefore $s = 2$

Traffic Intensity:

$$\rho = \frac{\lambda}{s\mu}$$

$$\rho = \frac{8.33}{(2)(11)}$$

$$\rho = 0.38$$

Steady-state probability that no grapes are in the queue:

$$\pi_0 = \frac{1}{\sum_{i=0}^{s-1} \frac{(s\rho)^i}{i!} + \frac{(s\rho)^s}{s!(1-\rho)}}$$

$$\pi_0 = \frac{1}{1 + \frac{(2 \times 0.38)^1}{1!} + \frac{(2 \times 0.38)^2}{2!(1-0.38)}}$$

$$\pi_0 = 0.45$$

Probability that the queue will be greater than servers can process:

$$P(j \geq s) = \frac{(s\rho)^s \pi_0}{s! (1 - \rho)}$$

$$P(j \geq 2) = \frac{(2 \times 0.38)^2 \times 0.45}{2! (1 - 0.38)}$$

$$P(j \geq s) = 0.21$$

The expected amount tonnes of grapes waiting in the queue for services:

$$Lq = \frac{P(j \geq s)\rho}{1 - \rho}$$

$$Lq = \frac{0.21 \times 0.38}{1 - 0.38}$$

$$Lq = 0.13 \text{ Ton/hour}$$

Improvement percentage from As-Is process = 95%

The expected tonnes of grapes in the system:

$$L = Lq + \frac{\lambda}{\mu}$$

$$L = 0.13 + \frac{8.33}{11}$$

$$L = 0.89 \text{ Ton/hour}$$

Improvement percentage from As-Is process = 73%

The expected time the grapes wait in line:

$$Wq = \frac{P(j \geq s)}{s\mu - \lambda}$$

$$Wq = \frac{0.21}{(2 \times 11) - 8.33}$$

$$Wq = 55 \text{ sec}$$

Improvement percentage from As-Is process = 95%

Expected time grapes spend in the system:

$$W = \frac{L}{\lambda}$$

$$W = \frac{0.89}{8.33}$$

$$W = 6 \text{ min}$$

Improvement percentage from As-Is process = 75%

The results in the above queuing theories will be compared in the trade-off analysis in section 7.2.1.2 below.

7.2.1.2. Trade-off Analysis between production process improvement alternatives

Table 28 - Trade-off Analysis

Queuing System Characteristics	Improvement Alternative 1: One machine with increased capacity	Improvement Alternative 2: Two machines with the same capacity	Victor
Lq Expected amount tonnes of grapes waiting in the queue for services	Lq = 0.3 Ton/hour Improvement % from As-Is process = 88%	Lq = 0.13 Ton/hour Improvement % from As-Is process = 95%	2
L The expected tonnes of grapes in the system	L = 0.72 Ton/hour Improvement % from As-Is process = 78%	L = 0.82 Ton/hour Improvement % from As-Is process = 73%	1
Wq The expected time the grapes wait in line	Wq = 2 min Improvement % from As-Is process = 89%	Wq = 55 sec Improvement % from As-Is process = 95%	2

W Expected time grapes spend in the system	W = 5 min Improvement % from As-Is process = 79	W = 6 min Improvement % from As-Is process = 75%	1
Advantages	<ul style="list-style-type: none"> • Ease of implementation will be more feasible, don't have to change pumping system. • Average queue improvement of 84% • Will fit with comfort into cellar. 	<ul style="list-style-type: none"> • Can process two grape varieties in one day. • Average system improvement of 85%. • Lower operating costs (only have to run both machines during high queuing traffic days). • Improve the queue outside the cellar on average with 95% • In the case of a break-down, one machine can still run. 	2
Disadvantages	<ul style="list-style-type: none"> • High capacity machine have to run in medium and light queuing traffic days. • High operating costs. • High idle time in the case of a break-down. 	<ul style="list-style-type: none"> • Initial implementation will be tough. • Need for an additional pumping system. • Difficult to fit into cellar, will need additional loading deck, and roofing. 	1

The Trade-off analysis in Table 28 shows a draw between the two improvements. Looking at the table from a closer viewpoint it shows that Improvement two's advantages outweighs the advantages of Improvement one. Improvement two also reduces the queue outside the cellar with 95%, as appose to Improvement one's 89%, and the main problem that the Production Process Improvement should address is the queue outside the cellar.

The definition of a Business Process Re-engineering states that fundamental rethinking and radical redesign of a business process should make a dramatic improvement to the current business process.

Therefore the most fitting Production Process Improvement will be option two which states:

Add an extra Crusher and De-stemmer machine to the production line with the same capacity

7.2.2. Validate Branding and Sales Improvements

To validate the Branding and Sales Improvement, the current high inventory levels for the Cabernet Sauvignon will be revisited again to support the need for improvement. The validation will recall the “best practices” in the South African wine industry to corroborate a Branding and Sales Improvement’s success rate.

The current inventory levels vs. the predicted sales

Figure 23 - July 2012 Inventory Level Percentages

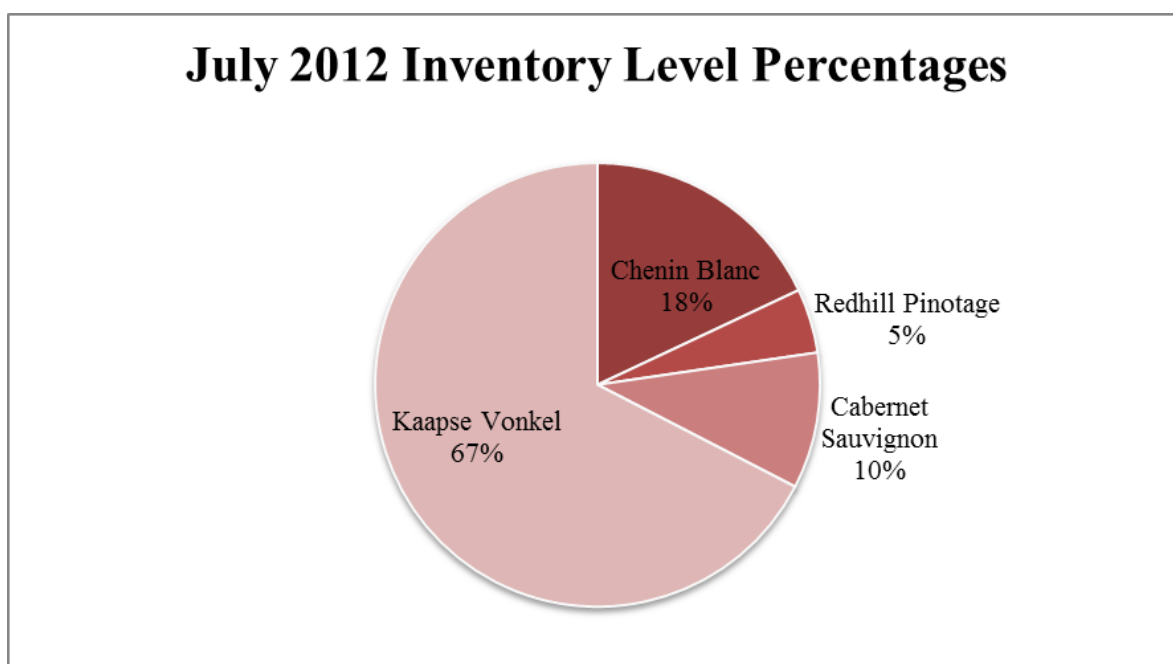


Figure 23 shows that in July, a buffer of Kaapse Vonkel was produced because Kaapse Vonkel is a seasonal wine that is mostly enjoyed in the summer; Simonsig needs to be capable to supply a large amount of Kaapse Vonkel coming spring. The second largest inventory item is the Chenin Blanc. Chenin Blanc is in demand all year round and is Simonsig’s best seller; therefore there must always be a sufficient inventory buffer. The Cabernet Sauvignon contribute for 10% of the inventory, but as seen in figure 24 below, only contribute to 5% of the sales. This is a clear indication of high inventory levels. The Redhill Pinotage inventory buffer is 5% of the total for the four wines.

Figure 24 - Predicted Sales for the year 2011/2012

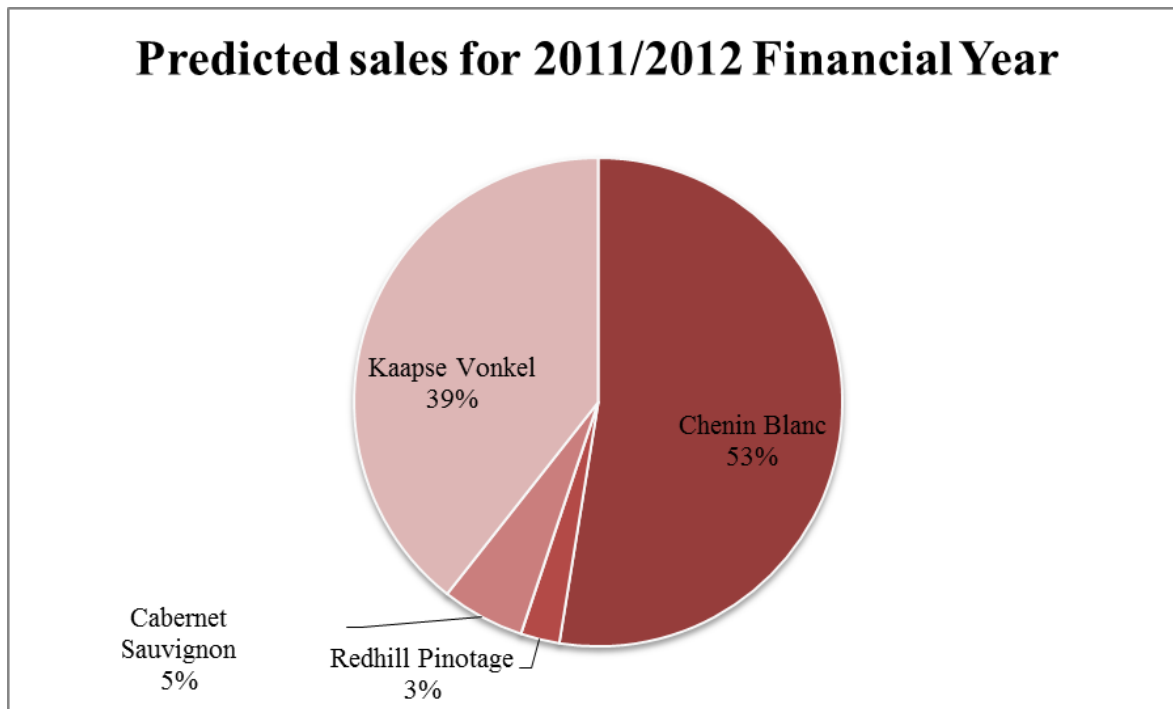


Figure 24 shows the predicted sales for the financial year 1 March 2011 to 28 February 2012. The Chenin Blanc and Kaapse Vonkel lead the predicted sales by 92%, displaying the obvious lead in sales. The predicted sales are then followed by the Cabernet Sauvignon and the Redhill Pinotage. It is assumed that the Redhill Pinotage sales will be low because it is one of Simonsig’s flagship wines from the “Stellenbosch” brand; it is an elite wine that should be an exclusive rarity. The Cabernet Sauvignon predicted sales are only 5%.

Benchmarking

As previously stated, the suggested improvement to the Branding and Sales Improvement were:

1. Give the Cabernet Sauvignon extinctive branding – a limited edition.
2. Re-launch the Cabernet Sauvignon in collaboration with a vibrant restaurant.
3. Give a face to the Simonsig brand.
4. Enlarge the Meridian Wine incentive for the Cabernet Sauvignon

The first three improvements proposed can be validated by referring to the industry’s best practices.

1. Give the Cabernet Sauvignon extinctive branding – a limited edition.

A limited edition simply implies a restricted number of copies. Making a limited edition product or a limited edition label to a product is one of the oldest marketing trickeries. A limited edition gives a product something new and unseen, and automatically gives the product instant value. It also places a sense of urgency to a product, indicating that the product will only be available for a short period of time. Limited edition products are frequently connected to an event, such as seen two years ago with the soccer world cup in South Africa, or with numerous rugby events. Limited edition products are also launched for several other reasons such as sales promotions, to connect with consumers, to create publicity in the market, to encourage multiple sales, to increase brand associations and brand exposure, and so on. Limited Edition branding is all about the marketing and selling the product.

Similar products that launched a Limited Edition product are (34):

1. Red Bull launches three special edition flavours



Three new flavours of Red Bull will be released in the UK during the first quarter of 2013.

2. Olmeca Altos Tequila gets a new image

NEW IMAGE



OLD IMAGE



3. Bottlegreen (Non-Alcoholic drink) releases a limited edition Pink bottle for Breast Cancer



There are numerous more examples to list; proving that a Limited Edition brand makeover will be a valid improvement.

Labelling the bottle in an attractive and appealing manner is extremely important for a limited edition launch. Some interesting wine bottle label designs for examples are (35):



**Inkwell Wine bottles
Rorschach-Inspired
what do you see?**



**Motor and wine
enthusiasts**



**Three Generations of
knowledge**

2. Re-launch the Cabernet Sauvignon in collaboration with a vibrant restaurant.

A Limited Edition wine is mostly associated with an event. An example of a wine farm collaborating with a restaurant at the moment is Van Loveren.

Van Loveren and the Rhapsody's Restaurant groups have recently collaborated and offer a year-end function, birthday, or any other event package. The package is a pre-set menu that customers can choose from and Van Loveren wine pairings together with the pre-set menu. This is ideal for year-end functions, birthdays, or any summer celebration. This not only advantage one of Van Loveren's wines, but a range of their wines are included in the package.

There are several wine festivals in the Western Cape that wine farms usually use to launch wines and market new brandings. However the Van Loveren – Rhapsody's partnership is throughout the entire South Africa.

3. Give a face to the Simonsig brand.

Putting a face to a brand is not an unknown marketing strategy and is used throughout the wine industry and various other industries. Two examples of wine farms who uses local celebrities or local social figures to advertise their brand is Val de Vie, and Beyerskloof.

Val de Vie and Ryk Neethling



Ryk Neethling is one of the best professional swimmers South Africa has ever delivered. After he retired, he joined the Val de Vie brand as the spokesperson and he is actively involved in Val de Vie's marketing division. He also collaborated with Val de Vie to create the Ryk Neethling Shiraz Blend. Ryk Neethling is very active on social networks and has 31 500 followers on Twitter, he contribute immensely to Val de Vie's marketing with a tweet. Val de Vie's marketing campaign is now a "best practice" in the wine industry, and pioneering new heights.

Beyerskloof and Koos Kombuis



Koos Kombuis is an Afrikaans artist, he is a singer and songwriter, he has published 10 novels and he is a columnist for Rolling Stone South Africa, Channel 24, De Kat, and "Die Taalgenoot". Koos Kombuis is very outspoken and at times even controversial, but he has a large audience of admirers and connects with them through various means. He is also very active on social networks with 16 000 followers on Twitter and an active blog. Koos Kombuis contributes greatly to Beyerskloof's marketing campaigns.

4. Enlarge the Meridian Wine incentive for the Cabernet Sauvignon

Enlarging the Meridian Wine Merchant incentive would result in an enlarged motivation for the wine reps to sell the Cabernet Sauvignon, but it will not be a feasible improvement.

Meridian Wine Merchants has a pre-set incentive for all the wine farms that they represent. In order to maintain fairness of their involvement with the farms, and the fairness to not advantage a specific wine farm – no matter what the circumstances are; therefore an increased incentive for the Cabernet Sauvignon will not be a feasible option.

7.2.3. Validate Distribution Improvement

The proposed distribution improvement was to update Simonsig's website and include online sales and distribution.

One of the main problems with the distribution process was that all of the Simonsig wines aren't always readily available at retailers and wholesalers. Especially the Redhill Pinotage, that Simonsig doesn't want to sell to any retailer or wholesaler.

The demand for the Redhill Pinotage is growing every day, and when an online ordering system is implemented, it will be more accessible for a typical wine consumer to purchase the wine. This will also assist the above mentioned improvements when demand increases for all the wines.

The option of implementing an online ordering system was already discussed in early May 2012, and was already implemented in September 2012.

7.3. IMPROVEMENT IMPLEMENTATION

The most important part of re-engineering is to convince everyone involved that change is essential and possible. The aim of the implementation plan is to formulate an implementation strategy for the improvements in terms of cost and time needed for implementation.

7.3.1. Production Process Improvement Implementation

The Production Process Improvement implementation plan will firstly be discussed in terms of cost, time, and area where the new Crusher and De-stemmer machine needs to be installed.

Cost of Improvement

The costs associated with implementing a new Crusher and De-stemmer machine can vary enormously. There are numerous options in the market to purchase a new Crusher and De-stemmer machine. From importing the newest and most advanced technology from France, Italy or America, to buying a second-hand Crusher and De-stemmer machine in the local market for a bargain.

The Production Process Improvement stated that an extra Crusher and De-stemmer machine with the same capacity as the current machine should be implemented in the cellar.

The intention of a Crusher and De-stemmer machine is to not actually crush the grapes but to de-stem the grapes so that the whole berries goes into the press, and the press can ensure that the optimal amount of juice is pressed out of the berries.

It would be ideal to implement a new machine into the production process that will have fewer breakdowns and still be able to run at the same capacity or even higher.

The proposed Crusher and De-stemmer machine to implement:



Zeta 60 Crusher and De-stemmer machine from Napa Fermentation Suppliers (36).

Product Features:

- Hopper with an angular screw to feed the machine
- Must pump to convey the grape must out of the cellar with 60mm hose fitting
- Rotating de-stemmer basket
- Width 80 cm
- Height 107 cm
- Length 150 cm

The costs of a brand-new Crusher and De-stemmer machine with a capacity to process 10 to 15 tonnes of grapes per hour will be discussed below.

Table 29 - Cost of Implementing the Crusher and De-stemmer machine

	Cost in Rand
Crusher and De-stemmer machine cost all inclusive	\$5 120.00 R45 000
Shipping Cost (150kg)	\$900.00 R12 000.00
Import tax (approximately 30%)	R13 500.00
Additional Costs	R30 000.00
TOTAL COST	R100 500.00

- Rand dollar exchange value of R8.74, as on 14 October 2012
- Consolidated air freight rates (US \$3-\$6/kg for 100+kg) together with other shipping costs (37).
- Import tax was taken as approximately 30%; this could be much lower because a Crusher and De-stemmer machine is not commonly produced in South Africa.

- Additional costs will include: concrete pavement outside the cellar, cellar wall and roofing adjustments, implementation of new pumping system, housing for Crusher and De-stemmer machine and other variable costs.

Time duration of the Improvement

The addition of an extra Crusher and De-stemmer machine will take approximately two months.

Only in the harvesting season is the section of the cellar containing the Crusher and De-stemmer, the press, and the fermentation tanks in use. Therefore there is a five month gap between June and October that the new Crusher and De-stemmer machine can be implemented.

Thus implementation time: Starting June 2013 - Ending July 2013 (a two month period)

Basic Facility Layout for Improvement

Cellar ground level layout:

Figure 25- Basic Layout of the Simonsig Cellar

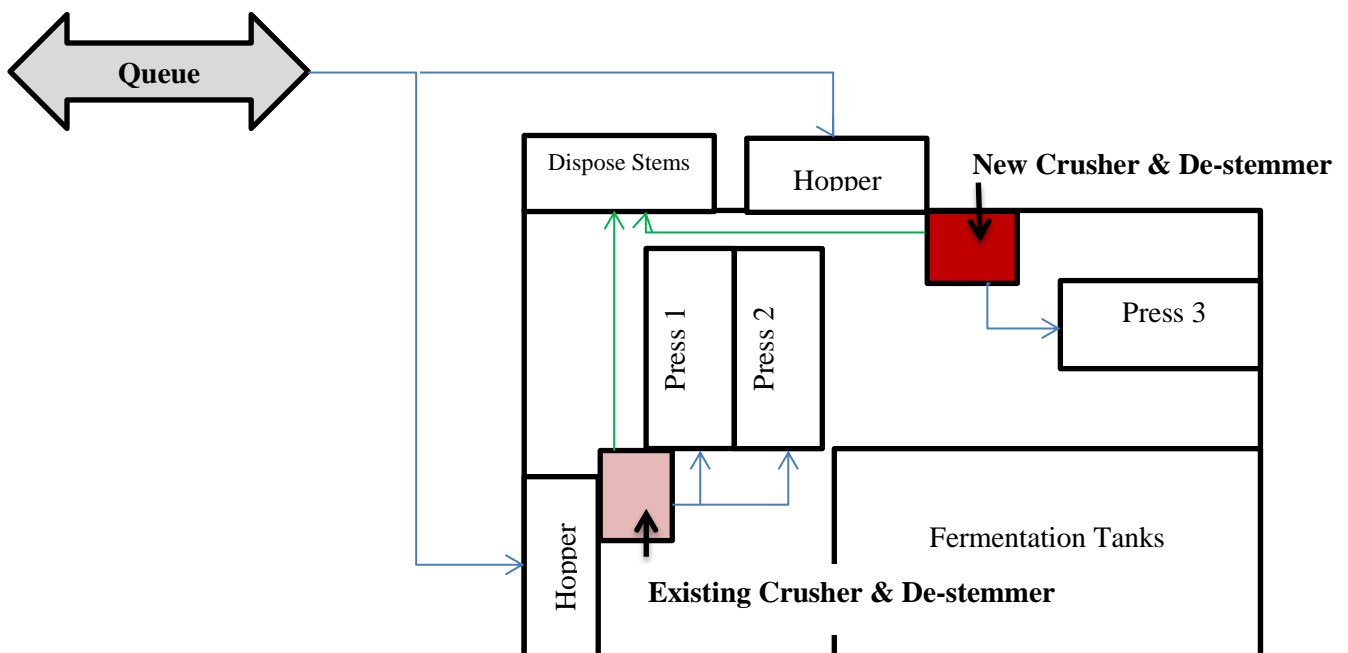


Figure 25 demonstrates a basic depiction of Simonsig's cellar. Press number three is the Press machine that is new to the cellar and it is not yet completely connected into the cellar pump system connecting all the machines, making it ideal to first connect the new Crusher and De-stemmer machine. Although space is extremely limited, the new Crusher and De-stemmer machine only needs a space of 0.9m². The hopper feeder will be situated outside the cellar and it will require additional roofing. Figure 25 only demonstrates the flow from the queue, into the Crusher and De-stemmer machines, and from the Crusher and De-stemmer machine into the Press machines. The blue arrows shows 'in-flows' and the green arrows shows 'out-flows'.

Once the Improvement is approved, an in-depth Facilities Planning Project may be conducted.

7.3.2. Branding and Sales Improvements Implementation

Implementing the Branding and Sales Improvement, the Methodology of the VCOR Brands Execute will be used. The Limited Edition branding should be in collaboration with a restaurant franchise and a spokesperson should be added to the brand.

1. Define Brand Requirements

The new brand should be approachable, fun, and enjoyable, but still elegant enough to be a 'premium' wine. The branding should be a little smaller than the current branding to reduce the unit cost per bottle. The branding should be elite, and be associated with a limited edition bottle. The Cabernet Sauvignon must be one of the Limited Edition wines, together with the Chenin Blanc that is a well-known wine, and a Méthode de Cap Classique wine. The Limited Edition launch should not include more than three wines, the Cabernet Sauvignon has to be one of the three wines, and the other two wines are optional.

Together with branding the Cabernet Sauvignon, and other applicable wines, as limited edition wines, the branding launch should be in collaboration with a hip and trendy new restaurant franchise group that is well represented and active in Gauteng, since the majority of the wine consuming market in South Africa resides within Gauteng. An ideal restaurant to

form an alliance with is the Tashas Group. The Simonsig-Tashas collaboration can include the following: Tashas can use the involved Limited Edition wines in selective food and wine pairings as part of limited period offer with a pre-set menu. A Cabernet Sauvignon winter exclusive offer can also be launched together with their delicious pastas and warm dishes.

A spokesperson should also be associated with the Simonsig brand that is very active on social networks and capable of addressing a wide range of audiences. The ideal South African social figure would be – Oscar Pistorius or someone with a similar influence in South Africa.

2. Differentiate Brand

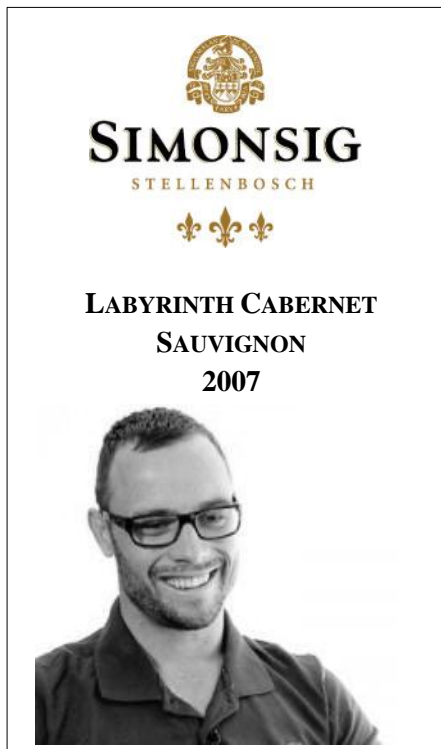
The brand will be differentiated as a Limited Edition bottle and brand. It will be associated with an event. Red wine bottle labels are usually in black, white and dark red colours. Colours used on the Limited Edition brand should be distinctive and associated with the market channels.

3. Select Market Channels

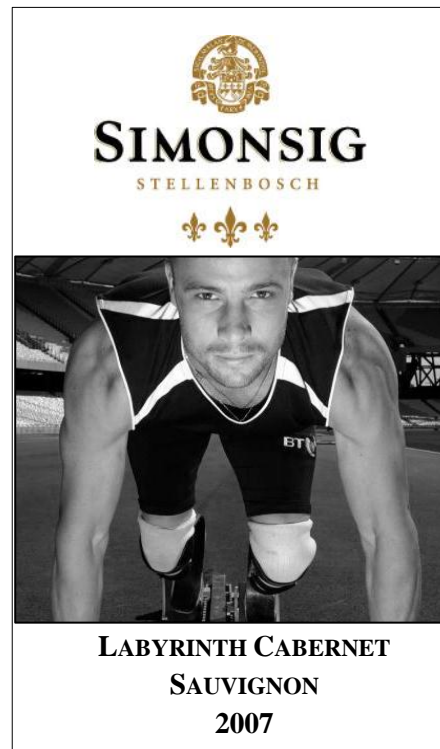
The Market Channel is the entire local market. Collaborating with Tashas will also open a new South African market channel.

Having Oscar Pistorius (or someone similar) as spokesperson for the brand, will not only address the local market, but will also address a large international market.

4. Architect Brand



Option One



Option Two

The basic layout should be something similar, but the final design will be outsourced to graphical designers and branding specialists. The use of colour should be minimal; dimensions should be 7cm wide and 10cm high.

5. Validate Brand

A panel of Simonsig directors will validate the Branding and Sales Improvement.

6. Protect Brand

Simonsig's brand is already protected; the new label should fall under the current protection.

7. Create Marketing Roadmap

The first step in the marketing roadmap will be to contract with a social figure in South Africa. The second step will be to collaborate with Tashas, creating special simile menus for

the various wines involved in the collaboration. The third step is to plan, together with Tashas, when the re-launch will take place and for how long it will be, the collaboration should preferably be in the winter season – because the main focus is to reduce the Cabernet Sauvignon inventory. The social figure need not only be involved in the limited edition time period, but can be involved later on as well. The Limited Edition launch can be promoted to the public as the launch of the face of Simonsig.

Simonsig’s marketing specialists will create a more in-depth marketing roadmap.

8. Launch Brand

There should be two major brand launches, one at the Simonsig wine farm, and the other in Gauteng at the Tashas in Melrose Arch, Johannesburg. The brand launches should be widely promoted to various audiences. Media and Industry leaders should be invited to the event. Meridian Wine Merchants should also be actively involved in the launch.

The launch should be marketed as a celebration to introduce the new spokesperson of Simonsig.

Cost of Improvement

The costs of such a major Branding and Sales effort are usually very large but the improvements could be very beneficial.

Table 30 - Cost of Branding and Sales Improvement

Budget Item	Cost
Cost of new labels:	
Only front label will be changed	
Front label cost per bottle	35c
Amount of bottles in Limited Edition	110 000 bottles
Cost of Limited Edition Labelling	R38 500
Cost of collaborating with a spokesperson	R750 000
Cost with Tashas collaboration	R25 000
Cost of re-launch events	R140 000
TOTAL COST	R953 500

The cost of the Branding and Sales Improvement may appear excessive, but it fits effortlessly within Simonsig's marketing budget per year. Marketing strategies should be re-examined to reduce cuts at current ineffective marketing campaigns.

If a 110 000 bottles of Cabernet Sauvignon are sold with a mark-up of R10.00 per bottle, the profit for the Branding and Sales Improvement will be R1.1 million. However the potential benefits from the Improvement will not only promote the sales of the Cabernet Sauvignon, but the entire Simonsig brand.

7.3.3. Distribution Improvement Implementation

The Distribution Process Improvement that consists of introducing on-line sales to the current distribution process of Simonsig has already been implemented in September 2012. Therefore no implementation strategy will be discussed.

7.4. BUSINESS CASE

As-Is processes will be mapped against To-Be processes in the Business Case to verify the improvements, what the improvement cost is going to be, and how long the improvement will take to implement.

As-Is Process	To-Be Process	To-Be Impact	Cost of To-Be	Time to To-Be
Production Process				
Current ‘Crusher and De-stemmer’ machine is the cause of a queue conveying outside the cellar, and the cause of low ‘litres per tonne’ conversions. The machine can process approximately 11 ton/hour. Queue outside the cellar has to wait 18 min in line to be serviced.	Proposed Improvement is to add an additional ‘Crusher and De-stemmer’ machine to the cellar. The capacity of the new machine will be approximately the same as the old one, and will be able to process 10-15 ton/hour. Queue outside the cellar will only wait 55sec.	95% Improvement on the queue outside the cellar 12% Improvement on the ‘litres per tonne’ conversions.	R100 500	2 months
Branding and Sales Improvement				
There are high levels of Cabernet Sauvignon inventory that is not performing as desired in the local market. Current branding doesn’t differentiate the Cabernet Sauvignon from other wines.	Re-launch the Cabernet Sauvignon wine with a Limited Edition label. In collaboration with the Tashas restaurant franchise. Put Oscar Pistorius (or someone similar) as face to the Simonsig.	Sell 110 000 bottles of Cabernet Sauvignon Promote the overall Simonsig brand	R933 500	6 months

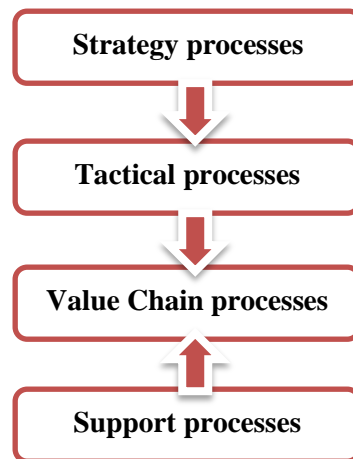
7.5. TO-BE PROCESS DESIGN CONCLUSION

The To-Be Process Design Chapter proposed a number of potential improvements, validated the improvements with a trade-off analysis and other techniques. After validation the infeasible suggestions were rejected, the cost, time and implementation for every feasible improvement were established and presented in a Business Case.

8. CONCLUSION

A business process is the combination of four main sub-processes which is strategic processes, tactical processes, value chain processes, and support processes. Every sub-process contributes to the business process to promote the customer.

Figure 26 - Business Process



The strategic process defines a plan for the business process. The tactical process ensures that the business has the necessary capability to perform the business process; the process is performed by means of controlling the capacity and activities in the supply chain process. The value chain network process includes all the procedures from the raw material to the final product, which delivers value to the customer. The support process supports the other three sub-processes (10).

The Business Process Re-engineering project addressed all four sub-processes of Simonsig’s business processes. The Strategy process was defined in the Preparation for Re-engineering, the As-Is Process Analysis, the Data Analysis, and the Benchmarking chapters. A business process plan was formulated. The tactical process was that the Production Process will have the capacity to process all incoming grapes – the suggested improvement was to add an extra Crusher and De-stemmer machine to the Production Process. The Value Chain process was defined and mapped and the supply chain were under question; the conclusion was made that Meridian Wine Merchants should stay on as Simonsig’s distributors. A Support Process plan, which is the Branding and Sales process, was proposed to Simonsig; the Branding and

Sales process will support the Production and Distribution processes in terms of increasing demand and strengthening Simonsig's market competitiveness.

Fundamental rethinking and radical redesign was applied on Simonsig's business processes, and this project delivers a complete and fresh Business Optimisation at Simonsig Wine Estate.

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