Development of a Supply Chain Performance Measurement Framework for the South African Wine Industry

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Abstract
The South African (SA) wine industry is underperforming due to a lack of supply chain management knowledge. Numerous studies in benchmarking and performance measuring have been conducted in a variety of industries, but little was developed for the wine industry. The aim of this article is to propose a methodology for the construction of a performance measurement framework for the SA wine industry. The implementation of such a framework and measurements will enable the development of industry wide benchmarks. These can be used to improve logistical performance, identify shortcomings in logistical processes and assist SA’s wine industry to reach world class standards. Four supply chain segments have been selected for the purpose of this study. The identification of these supply chain segments structures the methodology of the study since each segment will be investigated separately.

Keywords: Wine supply chain, performance measurement, benchmarking, responsiveness, South Africa.
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1. Introduction

Consumers constantly require superior products, services, customer support and faster delivery at lower cost. Industries and companies are challenged to meet these needs and be profitable at the same time. Apart from consumers’ needs, companies also face the challenge of global competition and market uncertainty. One way to manage these challenges is by managing the various supply chains within an organisation, also known as supply chain management (SCM).

SCM is becoming a key factor in any organisation and improves logistical operations and organisational effectiveness. It is difficult for organisations to make suitable decisions and improve logistical performance without an understanding of their supply chain. This is becoming especially important for the South African wine industry.

1.1 Background of the South African wine industry

South Africa has a rich winemaking history, dating back to 1655 when Jan van Riebeeck planted the first vines in the Cape region and pressed the first grapes in 1659. During the early 1900s the wine industry had a problem with overproduction. This resulted in the creation of the Ko-operatieve Wijnbouwers Vereniging, or KWV, which removed surplus wine at a fixed price. This encouraged the production of high volumes of low quality The KWV regulated the entire South African wine industry, for example KWV was the sole exporter and importer of alcohol and determined the minimum prices of all wines. In 1997 the KWV converted from a co-operative to a company, giving up its role to regulate the entire industry.

As a result of this, during the past two decades many cellars started to bottle and sell their own wines directly to the public rather than selling bulk wines to corporate - or other large cellars. This is done in order to benefit from an extended value chain and also to be less dependent on the buyer of the wine, who generally determines the price. Currently, South Africa has 50 producer cellars, and 493 private cellars, such as estate wineries and 21 producing wholesalers. The corporate cellars press about 80% of the country’s total annual harvest (SA Wine Industry Information & Systems (SAWIS)) (SAWIS, 2013).

Today the South African wine industry plays an important role in the country’s economy. Growth in contribution to South Africa’s gross domestic product has been at least 10% per annum since 2003 (WOSA, 2014). The South African wine industry employs about 275 600 individuals of which 58% are unskilled (SAinfo Reporter, 2010). The wine industry is South Africa’s second largest tourist attraction after Cape Town, which leads to further job creation and economic growth in industries outside of the wine industry (South African Tourism, 2014).

1.2 Project background

South African wine producers are currently under immense financial pressure (PwC, 2013). Wine producers will have to reduce costs and increase efficiencies of their supply chains in order to survive and stay competitive (Van Eeden et al., 2012).

Many researchers have provided literature on the scientific approach to wine making. The business and especially supply chain related aspects of wine production and distribution have however not received much research attention and therefore very little information and recommendations exist on the performance of the supply chains of the South African wine industry (Van Eeden et al., 2012). This lack of focus on supply chain activities is a concern since logistics costs are increasing in all industries. The performance of a supply chain plays a significant role in the success of individual companies as well as in industries, since there is a strong positive relationship between the performance of a supply chain and the profitability of a company. Companies that only focus on their own products and do not consider the supply chain within which it functions will struggle to remain competitive in a global environment (Akyuz & Erkan, 2010). The wine industry currently finds it difficult to improve and manage supply chain activities due to the lack of knowledge.

The application of supply chain knowledge in the South African wine industry was investigated by Stellenbosch University, PwC and the CSIR in 2012. The investigation confirmed the lack of effective supply chain management within the wine industry and identified the need for a study that will measure the supply chain efficiencies with the purpose of improving the wine industry supply chains (Van Eeden et al., 2012).

In order to improve performance, the current state must be measured. The decision of what and how to measure is not simple and forms part of the supply chain strategy of a company. Performance measurements
or metrics within a company should function as a system where the measurements work together to support the overall strategy.

Enriching the industry with knowledge and benchmarks through the application of the Supply Chain Operations Reference (SCOR) framework can highlight gross mistakes and problems for individual cellars and identify opportunities for improvement. The SCOR framework can benefit the wine industry by increasing logistic activity efficiency in the supply chains in order to improve current logistical performance and reach world class standards.

1.3 Objectives
The specific result and aim of the study comprises of five objectives. The project objectives are to:

1. Gather information from interviews, visits to wine farms, survey and research projects to understand the specific requirements of the industry.
2. Analyse and investigate the wine industry supply chain to comprehend a clear understanding about it.
3. Compile a literature study on a variety of benchmarking methods, including SCOR.
4. Develop a performance measurement framework and benchmarks for each identified segment of the South African wine industry.
5. Identify opportunities for further study on this topic.

2. Methodology
The research project is envisaged to run over three years, from 2014 to 2016. The detail methodology followed is discussed below. It includes case study analysis (hands-on analysis of individual cellars), detail literature review (similar studies), interviews and focus groups (industry leaders and supply chain experts from various other industries) and experimental study (performing benchmark measurements and analysing the results).

The first step was to identify a Steering Committee that could guide the research team through the process and assist in certain important decision points in the project. The Steering Committee is critical in ensuring that the research project stays on target in meeting the most urgent requirements of the industry and making sure that the project focus and outcomes remain valid.

Secondly, the Steering Committee was involved in performing industry supply chain segmentation and to prioritise the focus segments for 2014. The segments identified for 2014 were:

- Bulk wine for local market
- Packaged wine for local market
- Bulk wine for export market
- Packaged wine for export market

The Steering Committee was tasked to identify and convince specific cellars to participate in the study. These cellars had to be representative of all business models used in the industry, and needed to also be representative of the geographic distribution of the industry. Sixteen wine cellars agreed to participate in the research project. These cellars represent most of the wine regions in South Africa. Together these wine cellars account for the production of 23.4 % of all wine in South Africa and contribute significantly to each of the four segments as can be seen in Figure 2-1 below.

![Figure 2-1: Liters in sample and % of Industry](image-url)
Figure 2-1 – Contribution of participating cellar to studied segments

These cellars have committed to accommodate researchers to write a detailed case study that involve a supply chain analysis of the cellar. The standard SCOR methodology and analysis roadmap as dictated by the SCC are used for this process.

Two research work streams are proposed and utilised for 2014. In the first work stream, individual case studies are performed to analyse the supply chain preferences, challenges and opportunities of the individual participating cellars. This provides insight to the research team on the specific requirements from the wine industry in South Africa. It assists the research team to identify extraordinary elements that might require the standard SCC processes and metrics to be adapted.

In parallel to this a second work stream is developing the benchmark measurement framework for the SA wine industry. This is done through an extensive literature review to establish the ideal supply chain measurement framework for the wine industry segments under study. This ensures that each measurement included is applicable to the industry, and would predict which specific outcomes for each measurement will contribute towards the competitiveness and profitability of the cellar and thus the industry. Although parallel to work stream 1, work stream 2 analyses and incorporates all data obtained in the supply chain analysis case studies from work stream 1. Relevant supply chain metrics will be selected per segment for roll out into the industry in year 1.

In subsequent years selected measurements will be obtained from a wider audience of industry players. This will test whether the measurement framework established for each segment is representative of the wider industry. The measurement data per segment will be analysed in order to provide industry benchmarks and to identify the key performance attributes and most likely configuration of these performance attributes that would ensure maximum competitiveness in the industry. Part of the analysis would thus aim to determine which positive relationship exists between industry supply chain benchmark measurements and profitability of the participants.

The last part of the methodology would be to provide feedback to the Steering Committee, participants and industry as a whole. Feedback would be done on a holistic level, with only details about each participant shared with that participant. Confidentiality of information submitted to the project team will be of the utmost importance.

3. Outcome of the preliminary literature study

This section provides a summary of the outcomes from the methodology followed to date. It commences with similar studies that was completed and also include other benchmarking techniques and an overview of the South African wine industry.

3.1 Review of similar studies

Over the years a number of studies were conducted to establish benchmarks for specific industries. These studies include a variety of industries, such as chemical (Keren et al., 2004), service (Simpson & Kondouli, 2000), tourism and hospitality, (Perdue, 2004) and manufacturing industry (Gordon et al., 2001) among many others. However, very few studies relating to the wine industry have been done.

(Garcia et al., 2011) developed a framework to measure logistical performance in the wine industry in Argentina. The research was conducted on six wineries in Mendoza, situated in the west of Argentina. Garcia identified four performance attributes, namely quality, timeliness, logistics cost, and productivity and capacity which are similar to the five performance attributes of SCOR. Garcia’s attributes function in a similar manner as SCOR’s, where the performance attributes are further detailed into lower levels. The lower levels focus on specific areas and quantitative information is gathered to establish a benchmark for these indicators. However, SCOR’s indicators are generic for all industries whereas Garcia’s model has been developed specifically for the wine industry. Furthermore, Garcia stated that the research is not a complete benchmarking study of the wine industry of Argentina and further research is required. Garcia developed the model along logistical processes of wine producers in Argentina with similar quality and price segments, whereas this research is focused on the SA wine industry as a whole.

Adding to Garcia’s method, (Dollet & Matalobos 2010) proposed a multi-level network orchestration of premium and super-premium wines which takes a broader view of the entire supply chain. The multi-level network orchestration is a design which optimises all global networks and collaboration of the same product.
from different regions. In addition to Garcia’s model, it should be considered that all entities within the supply chain should fall under one strategy, which will probably be the most powerful member of the network (Dollet and Matalobos, 2010).

3.2 The Supply Chain Operations Reference Model (SCOR)

The SCOR framework makes it possible for businesses to determine and compare the performance of their supply chain and related operations against other businesses (SCC, 2013). (Huang et al., 2004) state that the major objective of SCOR is to improve the alignment between the marketplace and the strategic response of a business’ supply chain, on the basis that better alignment will lead to an improved bottom-line performance. (Huang et al., 2004) also state that by providing a set of performance metrics, industry best practices and enabling systems, the SCOR model allows businesses to perform very thorough fact-based analyses of all aspects of their supply chains.

According to the (SCC, 2013), the SCOR model is the world’s most widely accepted framework for evaluating and comparing supply chain activities and their performance. The (SCC, 2013) also provides a comprehensive list of the organisational benefits of adopting SCOR, but states no shortcomings of the SCOR model. In their research, Huang et al. discuss the weaknesses of the SCOR model. This includes a lack of change management and difficulties in network optimisation when using the SCOR performance metrics. (Cirtita & Glaser-Segura, 2012) point out another shortfall of the SCOR model, namely that performance metrics are only used for internal performance measurement and there exist no external performance metrics which can be used to measure the performance of inter-firm operations and coordination.

In 2010 a study was conducted by (Laville, 2010) with the aim of improving the supply chain of Alliance Loire, a company specialising in the marketing, sales and distribution of wines which are produced by nine co-operatives in the Loire Valley in France. Even though the SCOR model has certain weaknesses, Alliance Loire implemented the SCOR model. The company chose the SCOR model since it describes the business activities associated with all phases of meeting customer demands within the supply chain and since the model uses universal building blocks (plan, source, make, deliver, return, enable) which can be used to model any type of supply chain. Both the CEO and quality- and processes manager of Alliance Loire concluded that the SCOR model was extremely useful in delivering the expected financial returns and in growing their business.

With the above statistical benchmarking techniques in mind, it should also be considered how to effectively measure performance of an industry. Beamon states that the process of selecting appropriate supply chain performance measures is difficult due to the complexity of supply chains. (Hodge, 2011) mention a few important guiding principles for an effective performance measuring framework. The first guiding principle Hodge mentioned was to measure the system according to the vision of the organisation. Here the vision refers to the segments selected by the cellars. Other key guiding principles include measuring all processes comprised of both financial and non-financial data, the measurements should be evaluated over a period and measurements should be communicated and documented.

It is important not to measure only one or a few parameters. According to Beamon, a supply chain performance measurement system that consists of a single performance measure is generally inadequate since it is not inclusive, ignores the interactions among important supply chain characteristics, and ignores critical aspects of organizational strategic goals. (Tangen, 2005) states that some basic requirements should always be included in a good performance measurement system. These requirements are:

- Provide accurate information.
- Support strategic, tactical and operational objectives.
- Guard against sub-optimisation.
- Include a limited number of performance measures.

Beamon suggests that for a performance measurement system to operate effectively, the system must include three types of performance measures: resource measures (R), output measures (O) and flexibility measures (F). Resource measures include inventory levels, costs, etc. Output measures include responsiveness to customer orders, quality, etc. Flexibility measures include volume flexibility, delivery flexibility, etc.

There is a relationship between the SCOR attributes and what Beamon suggests should be included in a performance measurement system: reliability and responsiveness can be classified as output measures, agility as flexibility measures and costs and assets as resource measures. The SCOR model however fails to state that at least one of the measurements in each of Beamon’s categories should be included in a
measurement system. All of the above mentioned elements should be considered important when developing a performance measuring framework for the SA wine industry.

### 3.3 Benefits of supply chain management

Effective supply chain management has numerous advantages. This is because supply chain management does not only focus on, for example, reducing costs, but rather on the entire supply chain. This is confirmed by (University Alliance, 2014) who states that through supply chain management, Wal-Mart has realised several sustainable advantages, including lower product costs, reduced inventory costs, improved in-store variety, and highly competitive pricing for the customer. (Morgan, 2004) states that the supply chain is possibly one of the final structural areas of business in which significant savings are to be made, and it is becoming an increasingly important strategic tool as trade becomes global in perspective.

According to (Stewart, 1997), maintaining a competitive advantage forces constant redirection and enhancement of product features, cost, quality, options and services. Therefore supply chain management has joined product quality and time-to-market as a key competitive differentiator. This was stated in 1997 and is already outdated in many industries. (DeWitt et al., 2001) confirm this by stating that delivering a defect-free product faster and more reliably than the business’s competition is no longer viewed as a competitive advantage; it is simply a prerequisite to stay in the market. Supply chain management in the wine industry is however in its very early stages.

### 3.4 South African Wine Industry

This section aims to provide an overview of the South African wine industry and discuss specific supply chain activities. The level of maturity of the wine supply chain is considered and opportunities for improvement are identified.

#### 3.4.1 South African wine industry outlook

The PwC annual South African wine industry insights survey provides an overview of the performance of the wine industry by consulting the major role players in the industry (PwC, 2014). These include chief executives of private and producer cellars as well as industry bodies and regulators. Role players were asked to give their outlook on the current market conditions with regard to the global economy in general. Figure 3-1 shows the responses of the CEOs and other role players.

**Figure 3-1** - The general economic and industry outlook over the next 12 to 36 months (PwC, 2014)

The general economic and industry outlook from these role players seem to be positive. Most of the CEOs expect conditions to improve within the next three years, although the outlook for the coming year is not as optimistic. It can be noted that none of the role players expect a deterioration of the market conditions over the next three years. There is also reason to believe that packaged wine is becoming more important in the future. Figure 3-2 below indicates the view of the role players when asked where they think the most significant opportunities for growth is with regard to product composition (bulk or packaged distribution).
Although bulk distribution is the main focus of most cellars, packaged products are becoming more important in the future since opportunities for growth are expected. Bulk distribution to the export market has increased over the past decade and now plays a significant role in the industry.

3.4.2 South African Wine Supply Chain

Supply chain literature on the South African wine industry is very scarce. Wine industry bodies such as Vinpro and Winetech fund several research projects with regard to the wine industry every year. These projects mainly involve research with regard to grape production and winemaking, but nothing of substance has been conducted with the aim of improving the wine industry’s supply chains. SAWIS continuously collect data regarding wine production and vineyards, but nothing in terms of supply chain performance. Capturing wine supply chain data is currently not the mandate of any SA wine governing body. A business will not be able to grow effectively if it can generate quality products, but is not able to deliver these products on time to the customer.

Since 2003 Price Waterhouse Coopers (PwC) has performed the Wine Industry Insights Survey which is a benchmarking survey of the producer cellars’ financial performance. In 2010, 2012 and 2013 this survey included a section on supply chain activities for the first time. The study was performed in collaboration with Stellenbosch University and the CSIR. Over the past years this survey has brought insight into the current situation at wine farms and producing cellars in terms of the context and complexity of supply chain and performance management activities that are performed.

From the beginning it was clear that there are several supply chains within the industry and that a distinction will have to be made when comparing activities of different producing cellars. The activities involved for exporting and local distribution are very different since exporting increases the complexity. Selling wine in bulk quantities however reduces the complexity of activities and therefore a distinction must also be made between the distribution of bottled and bulk wine.

One of the important shortcomings of the industry is the lack of communication between participants. If timely information is available to all organisations within the supply chain, the competitiveness of the entire industry can be improved (Stellenbosch University & CSIR, 2010). It will also be beneficial for the industry to realise the importance of logistics and use it to gain a competitive advantage in the market rather than viewing it as an expense that should be controlled. This is also recognised as a global trend. According to (Laville, 2010), who specifically focussed on the French wine industry, the application of supply chain management as a strategic lever is rarely used. Laville further states that the wine industry is suffering, more than other industries, from a low maturity of supply chain management which results in non-cost-efficient operations.

3.4.3 Wine industry competition

Although SA’s wine exports and global wine consumption have increased, it shouldn’t be disregarded that the global consumption of spirits and beer is following the same trend. This is probably due to the economy recovering from the 2008 global recession, commonly known as “Great Recession”, which leads to an increase in consumer spending. The global economy growth predicted for 2014 is 2.9%, following the 1.3% economic growth in 2013 (Erumban & Abdul, 2014). Considering the upward trend, it appears as if consumer spending will increase.
The wine producer’s competition reaches far beyond that of competing against wine producers both local and international. Strong competition is also encountered against spirit and beer producers. Competition between these industries is expected to grow more intense this year according to (Crocker, 2014). Therefore SCM in particular is expected to become more important for the wine industry. Crocker’s statement, “never before has the battle for share of glass been so intense”, clearly defines the challenges wine industries have today. Illustrating this trend (Figure 3-3) it can be seen that beer remains the world’s most popular drink with an average of 17.5 litres of consumption per person per year. Second on the figure is wine with an average of 3 litres per person per year and following wine is spirits averaging 2.2 litres per person per year.

Figure 3-3: World consumption by type (EpiAnalysis, 0)

3.5 Segments within the South African Wine Industry
It is important to understand that each cellar has hundreds of supply chains starting at their diverse number of suppliers of grapes and other sourced components to each consumer that enjoys their products. Four segments of the wine industry have been chosen for this study: bulk local, bulk export, packaged local and packaged export. These four segments are merely a simplified view obtained by categorising the hundreds of supply chains in a way that can be measured and to some extent compared. A representation comprising of the physical flow in the two export supply chain segments can be seen in Figure 3-4. A description of the flows is detailed in Error! Reference source not found..

Figure 3-4: High level representation of physical flow in export wine supply chain (Van Dyk & Foster, 2007)
Most of the wine cellars supply wine to at least two of the markets. Depending on the strategic value of each segment their two most important segments were identified as focus areas for the study. The aim was also to have enough participants in each segment. The insight gained in terms of the importance of the various attributes are summarised below. Some characteristics of each segment are also discussed.

### 3.5.1 Packaged export SC segment

Bulk wines are sold in large volumes compared to packaged wine and bulk wine producers generally have fewer stock keeping units when compared to packaged wine producers. For this reason, and due to more uncertainty within the global market than in the local market, it is generally the case that responsiveness is more important in the export packaged segment that the other segments. This is confirmed by the interviews held with six of the sixteen wine producers whose main focus is the export packaged segment. Of the six wine producers, four selected responsiveness to be the most important attribute in their supply chain strategy, one cellar selected reliability and one cost.

### 3.5.2 Bulk export SC segment

Bulk export includes all wine being transported out of South Africa in bulk format. Bulk export SC comprises of all processes from picking of grapes to delivery at the loading port under the Free on Board (FOB) schema. FOB means the wine supplier is responsible for the product up to the boarding port, thereafter the products are shipped to the designated country with the responsibilities of the product shifted to the importer.

From the exploratory interviews it was established that eight out of the sixteen cellars identified bulk export to be one of the two segments they wish to focus on (Error! Reference source not found.). The cellars had to choose which one of the performance attributes should be superior. Seven of the eight cellars selected reliability to be superior for export bulk segment. Therefore a primary concern for all cellars focusing on export bulk is the reliability of their product, were reliability is defined as all items and quantities on-time, complete documentation and in the right condition (SCC, 1999). Six out of the seven cellars mentioned above selected responsiveness to be advantage. This trend is a starting point to develop a performance measuring framework for the export bulk segment of the SA wine industry.

### 3.5.3 Packaged local SC segment

Six wine cellars indicated that the distribution of packaged wine to the local market has strategic value to them. Although reliability and responsiveness are very important to most of the cellars, cost is the attribute that is selected for superior performance by three of the six participants. Since only one attribute should be selected for superior performance, this shows a strong focus on cost in the local market. The importance of cost to the cellars may be influenced by the fact that wine is often seen by South African consumers as a commodity.

### 3.5.4 Bulk Local SC Segment

Cellars that supply and distribute bulk wine to the local market do not focus on the same attributes. Reliability, responsiveness and cost seem to be the most important attributes.
Error! Reference source not found. shows the initial data that was collected from the participating wine cellars to describe their strategies and indicate the attributes selected for superior and advantage performance. The ‘S’ therefore indicates superior performance (Top 10% of industry) was selected and ‘A’ refers to advantage (Top 30% of industry). It should be kept in mind that only one attribute may be selected at superior level, but up to two attributes can be selected at advantage level.

<table>
<thead>
<tr>
<th>SCC Performance Attributes</th>
<th>Bulk local</th>
<th>Bulk export</th>
<th>Packaged local</th>
<th>Packaged export</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>S* 1</td>
<td>A** 4</td>
<td>S* 7</td>
<td>A** 1</td>
</tr>
<tr>
<td>Flexibility</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Cost</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Assets</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of wine cellar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>focusing on the specific</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>segment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*S = Superior (Top 10% of industry),  
**A = Advantage (Top 30% of industry)  
(SCC 0)

Table 2: Summary of the exploratory interviews

As mentioned in Section 2, work stream 2 will consist of the construction of benchmarking measurements. Table 3 illustrates the benchmarking measurements selected for a preliminary test measurement among the 16 participating cellars. During the first round of these measurements, the same data will be required for each of the segments. Each cellar will only have to provide data for the segments that were identified to have strategic value to the cellar.

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reliability</td>
<td>Perfect Order Fulfillment</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>Order Fulfillment Cycle Time</td>
</tr>
<tr>
<td>Agility</td>
<td>Upside Supply Chain Flexibility</td>
</tr>
<tr>
<td>Cost</td>
<td>Storage Cost</td>
</tr>
<tr>
<td>Transportation Cost</td>
<td></td>
</tr>
<tr>
<td>Assets</td>
<td>Inventory Days of Supply</td>
</tr>
</tbody>
</table>

Table 3: Preliminary measurements for work stream 2

Depending on the progress of the performance measurement frameworks for the various segments as well as the feedback received, the measurements might be changed or adapted in the future.

4. Conclusion and recommendations

Initial studies indicated that some players in the SA wine industry seem to be under financial pressure. The lack of efficient supply chain management and SCM knowledge found in the industry could be contributing to this situation. The researchers believe that enriching the knowledge of SCM can improve logistical performance, ease the pressure on wine producers and uplift the industry. This should be done through measuring the supply chain activities, analysing supply chain problems and opportunities, and by implementing appropriate industry best practices. During this process industry players will obtain valuable supply chain knowledge.

Quantitative and qualitative information are gathered mainly through interviews and visits to wine cellars. The information obtained will be used to develop a performance measurement framework for each of the four identified segments and also to provide benchmarks to SA’s wine industry. Wine producers can then compare their supply chain’s performance against industry standards. The research will also provide the wine industry with a way of improving the wine supply chain activities, achieving world class standards and enabling the industry to compete in the global market.
A performance measuring framework can be developed using the SCOR reference model. This paper proposed the methodology that will be followed and also discussed the need to develop such a framework and benchmarks.

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