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# PRACTICES IN THE WINE SUPPLY CHAIN

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## ABSTRACT

### Purpose

The low level of supply chain maturity and the lack of industry best practices in wine supply chains are stated to be some of the biggest challenges for this industry. The aim of this paper is, therefore, to explore practices in the wine supply chain, and to evaluate a framework of supply chain practices through a multiple case study.

### Design/methodology/approach

A multiple case study approach is used, through which the case of a multi-national wine producer is compared to the supply chains of small Australian winemakers.

### Findings

The findings corroborate that performance, while highlighted in production and the quality of the product, is less in focus in terms of efficiency and effectiveness in the supply chain. The wine supply chain is very manufacturing and marketing-focused, with distribution supporting these activities. The case study shows that supply chain practices such as customer orientation, process integration and visibility are key to the wine supply chain, albeit they are not discussed in supply chain terms.

### Research limitations/implications (if applicable)

The research indicates the link between supply chain practice and performance, yet the directionality of this link remains to be established.

### Practical implications

Wine researchers have called for more research in supply chain management. This paper aims to fill this gap and in addition provide practitioners with practice examples.

### Social implications

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### Original/value

This paper is a first evaluation of a conceptual framework on supply chain practices in the wine supply chain. This framework is very useful for eliciting current practices but also for benchmarking with other companies in the wine industry.

*Keywords:* Supply chain practices, supply chain, wine supply chain, best practice, competitive advantage

## 1. INTRODUCTION

The wine industry is proud of having a long history. Even “new wines” and “new world wines” are from areas where wine has been grown by now for centuries. More recently, wine has been started to be cultivated also in various Asian countries, predominantly in China, there are new growers in various countries in Africa and also more and more Latin American countries are interested in growing wine. Also climate change impacts on the locations where wine can be grown. Apart from these developments, the industry is impacted largely by trends in alcohol consumption but also changes in preferred tastes (Douglas, 2012). Furthermore, consumers have started to put more emphasis on various aspects of sustainability in the wine industry (Golicic and Smith, 2013), e.g. its carbon and water footprints (Pattara *et al.*, 2012; Christ, 2014). Such a change in emphasis and expectations is expected to alter supply chain practices.

In spite of the history and also the size of the global wine industry, which for 2013 has been estimated to 25.7 billion EUR (OIV, 2014), and in spite of the sizeable research efforts put into growing, production, and even wine marketing, each of which have dedicated journals, from the *American Journal of Enology and Viticulture* to the *International Journal of Wine Marketing*, there is considerably less research on wine supply chains. At the same time, the success of the industry depends not just on the quality of the wine, but also, how the wine reaches consumers, which is, according to Kumar *et al.* (2013, p.1078), “one of the longest supply chains in the world”. The very length of routes has been investigated in terms of the impact of ports and choices in transportation modes on the wine supply chain (Moccia, 2014). But the supply chain also impacts on the quality of wine, as Ting *et al.* (2014) emphasize in light of the cold chain. Not surprisingly, literature has come to highlight the importance of supply chain relationships (Wilson and Goddard, 2004; Thah and Olsen, 2006; Steiner, 2012; Kumar *et al.*, 2013) as well as traceability (Cimino and Marcelloni, 2012; Ting *et al.*, 2014).

The wine industry has been criticised for its low level of supply chain maturity overall, with various studies suggesting a focus on benchmarking and best practice research in this industry (Chandes and Estampe, 2003; Blok *et al.*, 2013, Donati, 2013; van Eeden *et al.*, 2014). Even Estampe *et al.*'s (2013) review of various supply chain benchmarking techniques has been partly based on their studies on the wine supply chain. Yet what are the supply chain practices in this industry? These are the questions this study aims to answer. The aim of this paper is, therefore, to explore practices in the wine supply chain, and to thereby evaluate a framework of supply chain practices through a multiple case study. The study at hand compares a multi-national corporation (MNC) in the wine industry with insights from several local small winemakers in Australia. The study applies the supply chain practice framework that Spens *et al.* (2014) had developed for the wine supply chain on these cases, and evaluates the framework through them. Conclusions are presented for supply chain practice literature, as well as for the wine supply chain.

## 2. WINE SUPPLY CHAINS

Wine supply chains are in essence agro-food supply chains. Their upstream activities and members are limited to aspects of the growth and the packaging of wine (bottling, barrels, other packages), as the wine industry themselves produces the raw materials that is distributed downstream. This is an important limitation to the potential of applying supply chain practices such as flexibility, or outsourcing manufacturing activities – though if taking the perspective of winemakers and wine merchants, growth, production and even packaging and labelling can be outsourced, and also postponement strategies can be applied for packaging, labelling, as

well as the use of (base) wine for other wine-related products such as brandy or sparkling wine. The actor structure of the wine supply chain can thus vary from producer cellars that grow, produce and distribute their wine, to including specific wine makers, merchants, distributors, specialised logistics service providers, wholesalers and retailers (Chandes and Estampe, 2003; Costa-Font *et al.*, 2009; Wilson & Goddard, 2004), to the supply chain of bulk wine that is to be blended (and bottled) elsewhere, to the supply chain of further refined goods. A further level of actors is added through certification bodies, information and training schools (Wilson and Goddard, 2004), but also marketing bodies for specific cluster of wine (e.g. Wine Australia that manages the wine of origin brand of Australian wines as a cluster).

Wine of origin clusters emphasise the provenance of the wine, its quality, and the role of regional production. Vineyards and wineries in these clusters will use cluster to exchange knowledge and information based on relationships (Aylward, 2004; Morrison and Rabellotti, 2009). A study by Aylward of Australian clusters identified an «innovative cluster» where collaboration and innovation were linked to improved production and where supply chain integration offered competitive advantages on the export market (Aylward, 2004).

In the academic literature wine supply chains are usually studied by type of products or by actors or through a combination of both depending on their research topic and geographical constraints. Spawton (1990) offers a simple dichotomous approach between fine wines with a focus on high margins, specialist outlets, control of scarcity and ageing and beverage wines with a focus on price competition where continuous availability and stock turnover are prioritized. Chandes and Estampe (2003) through their investigation of the logistics performance of actors in the wine supply chain in the Bordeaux region identify four types of products and specific distribution strategies: branded wines, store brands, «Grand Crus» (fine wines) and wines marketed directly by the winemaker to the clients. They highlight the potential for efficiency gains in the branded and store brand categories where information and actors are better integrated (Chandes and Estampe, 2003). The use of integration in supply chains was also put forward as a key success factor by Mora after his investigation of the Bordeaux wine crisis (Mora, 2006). In New Zealand a study by Tipples explores the fragility of the link in wine supply chains with major retailers (Tipples, 2010) while another New Zealand study by Wilson and Goddard (2004) analyse the various inputs of the supply chain and how their relationships create value. In Portugal, Brito (2006) develops a holistic overview of the port wine sector and puts forward a strong emphasis on relationships. The role of relationships is further reprised by Thah and Olsen (2006) as being relevant in creating strategic partnerships in the US winery sector. Both the themes of integration and relationships for wine supply chains are put forward in the literature discussing wine supply chains, this reflects some of the trends found in supply chain practices and is in line with the findings of Beaujanot *et al.* (2004) who in their study of Australian firms identify that a strong market orientation and a long-term relationship orientation leads to better firm performance.

A customer focus also plays an important role in the context of wine supply chains. Supply chains that have a strong market orientation obtain better firm performance (Beaujanot *et al.*, 2004). Indeed, one of the key success factors in wine industry is to move as close as possible to the market (Mora, 2006). Market orientation was also linked to success in exports in the Australian wine industry (Jordan *et al.*, 2007).

Energy efficiency is also another topic of interest in the context of greenhouse gas emissions and international wine associations and country federations have developed protocols and accounting tools for greenhouse gas emissions (OIV, 2011; FIVS, 2008; WFA, 2012). Emissions in the wine supply chains are mostly produced by packaging/bottling and distribution (Bosco *et al.*, 2011; Neto *et al.*, 2013; Reich-Weiser *et al.*, 2010).

Overall, wine supply chains can be fairly complex with multiple actors or fairly simple with a winery handling every step from grape growing to sales to the consumer. Gurau and Duquesnois (2008) distinguish between wine supply chains that focus on direct distribution, in other words, the sales in wine caves and wineries, markets, trade shows, by mail, via the internet or through associations of producers; and indirect distribution that takes place through channels such as small or specialized shops, supermarkets restaurants and through exports.

### **3. SUPPLY CHAIN PRACTICES IN THE WINE SUPPLY CHAIN**

Logistics and supply chain management has seen various eras (Kent and Flint, 1997, Skjøtt-Larsen, 2000; Spens and Kovács, 2010), thus not surprisingly, supply chain practices are also under constant evolution. Trends in terms of supply chain practices can be depicted both in time, as well as across different geographical areas (Koh *et al.*, 2007; Spens and Wisner, 2009). More recently, Chae (2015) has analysed supply chain-related tweets for trends in their content, indicating the areas of sustainability, and big data to be of rather current concern. Importantly for this study, supply chain practices are also proposed to differ across industries (Kovács and Tatham, 2009; Christopher and Holweg, 2011; Fawcett *et al.*, 2011).

Borgström (2012) has suggested a specific methodology for studying supply chain practice, which she calls the “mystery methodology” that in essence uses an abductive research approach. She postulates that the focus of supply chain practice research is something that is potentially interesting and that cannot be solved or explained by extant literature.

Given the suggested low supply chain maturity of the wine industry, supply chain practice in this industry constitutes some level of mystery. Spens *et al.* (2014) have previously collected and structured supply chain practice literature in this industry, distinguishing between best practice and baseline practice. According to them, baseline supply chain practice includes the dimensions of planning and procurement, manufacturing, inventory management, transportation, distribution and warehousing. Decomposing these further, for example, planning and procurement would include practices such as range forecasting, sales and operations, collaborative forecasting and information sharing with suppliers, sourcing information, private models for marketplaces, collaborative planning, supplier development, strategic sourcing, supplier relationship management. Each of the others can be similarly decomposed (see Table 1). More interestingly, their model also lists best practices, which are proposed to include customer orientation, process integration, supply chain visibility, strategic supplier partnerships, a higher level of information sharing with high information quality, and supply chain collaboration.

Overall, two observations stand out; firstly, a functional view dominates baseline practices, as in Mangan and Christopher’s (2005) model of logistics skills, whereas best practices refer to more relational skills that extend to the supply chain. Secondly, Spens *et al.* (2014) detected some differences in the importance of various best practices in the wine supply chain, with the top three being customer orientation, process integration, and visibility. However, Spens *et al.* (2014) could not find evidence in wine supply chain literature for the practices of customer orientation, process integration, nor visibility, in spite of these being the typical “top three” best practices in supply chain management literature overall. This study thus sets out to investigate the mystery of the lack of the presence of these practices in wine supply chains. The ultimate driver for investigating supply chain practices is that they are suggested to have a positive effect both on firm and supply chain performance (Spens and Wisner, 2009; Prajogo and Olhager, 2012).

**Table 1:** Best practices vs. baseline practices (adapted from Spens *et al.*, 2014)

**Best practice**

*Customer orientation:* helps ensure the integration of key business processes in order to respond accurately and in a timely way to customer requests.

*Process integration* is imperative for the alignment of a company's operational and supply chain strategy with other functional areas, as well as with those of suppliers and customers.

*Visibility* is a prerequisite to agility and responsiveness and the key to visibility is shared information.

*Strategic supplier partnerships.* Sourcing decisions are fundamental and the choice of supplier and associated question of how businesses are effectively integrated to maximize their complementary skills are important issues.

*Level of information sharing:* refers to the extent to which non-public information is communicated along the supply chain.

*Information quality:* refers to the accuracy, credibility and timeliness of information shared between trading partners.

*Integration intensity.* Integration intensity reflects the links that allow to improve information processing between functional departments, as well as externally between trading partners

*Collaboration.* Internal collaboration is imperative for effective integration and alignment of a company's operation. Externally, collaboration fosters and stimulates information sharing.

**Baseline practice**

*Planning and Procurement.* Range forecasting, sales and operations, collaborative forecasting, planning and information sharing, sourcing information, private models for marketplaces, supplier development, strategic sourcing, supplier relationship management.

*Manufacturing.* Lean manufacturing, demand-driven networks, six sigma quality control approaches, supply-chain operations reference models, product life cycle analysis.

*Inventory management.* VMI, Postponement, collaborative forecasting, ABC classification, cross-docking, echelon inventory systems

*Transportation.* Collaborative relationships, multimodal transport systems, transportation management systems (TMS), carrier cooperation, transport planning, transport network reconfiguration, customer centric transportation processes

*Distribution and warehousing.* Outsourcing, warehouse management systems (WMS), customer relationship management (CRM), customer lifetime value, parts management

But while Spens *et al.*'s (2014) framework is a pyramid of best vs. baseline practices, as they have also not found evidence to support this as a type of ranking in the wine supply chain in particular, we will now proceed with evaluating their framework and the practices listed in them through our case studies.

## 4. METHODOLOGY

Due to this being supply chain practice research, we follow Borgström's (2012) mystery methodology. As she suggests, mystery methodology follows an abductive process. In this regard, our puzzling point was constituted of the results in the Spens *et al.* (2014) study that the top best practices in supply chain practice literature were not echoed in wine supply chain literature. In supply chain management, mystery methodology can either set out to study a particular supply chain, or a particular social practices (Borgström, 2012). Importantly, the methodology focuses on the context specificity of knowledge, or practices – which we here apply to the wine supply chain. However, we deviate from the mystery methodology in that we study a list of practices, both on baseline and best practice levels (see Diaz *et al.*, 2011) instead of being only steered by data. The resultant empirical study is a multiple case study in which we compare the views of a multi-national corporation (MNC) in the wine industry with insights from several local small winemakers in Australia. This follows purposeful sampling

to enable such a comparison, as the two types of winemakers and their difference in scale bring about different supply chain considerations and practices. In both cases, snowballing was used to identify further respondents. Even though snowballing was used inside an organisation, the different organisation were contacted separately which helps to have independent cases.

A semi-structured interview guide has been developed for data collection. This interview guide follows the Spens *et al.* (2014) framework on supply chain practice, and complements it with questions on strategy and key performance indicators, as well as on issues related to climate change. The interviews started with an explanation of the study and of the Spens *et al.* (2014) framework. The first set of questions asked for a description of the supply chain and its development from a historical perspective. A second group of questions asked about the supply chain strategy of the company, and in light of this strategy, the performance measures that were perceived as key. But whilst performance was central in the interview guide, more specific data on actual key performance indicators (KPI) was not collected. Rather, the section on performance was added due to supply chain practice literature emphasising the link between practice and performance (Fawcett *et al.*, 2011; Estampe *et al.*, 2013; Golicic and Smith, 2013). Next, we asked about the practices in the supply chain, particularly asking the question of what respondents perceived they were “best” at. Thus, the interpretation of “best practice” was left to respondents, revealing their views on what constitutes best in their context. Last but not least, a group of questions was added to uncover how these supply chains dealt with disruptions, and with climate change. The section on climate change followed was added due to the impacts of climate change on viticulture overall, but also due to aspects of it in relation to the cold chain (Ting *et al.*, 2014).

The data collected for this research consists of interview notes, field visit notes and transcripts of interviews. Interviews for the large multinational company were done in its home country (Spain) as well as in another country where it owns two major winery estates (Australia). This large multinational company produces hundreds of thousands of bottle of wine every year at these locations and exports its products across the world under different brands linked to their country of origin. Furthermore, the Australian operations are also responsible to manage Spanish importations as well as market development for all brands of the organization across South East Asia. While, the small cluster of wineries is located near Caboolture north of Brisbane in Australia. Interviews were done with three different wineries, in this case the production capacity varied from 10 thousand to 40 thousand bottles a year. None of the wineries were active in the international market and distributed directly to clients through cellar doors, fairs, mail or internet. A total of 4 organisations were studied, one large multinational in two of its different international operations and three small local wineries. The interviews were recorded and notes were taken, there is 282 minutes of interview with 8 interviewees. The interviewees of the small winery were mostly the owners and operators while the interviewees of the multinational winery were managers in the organization.

Template analysis was used as analysis technique for this study. Template analysis is a method in which a list of themes or codes, organized in a certain way to represent relationships between themes, is used to guide the analysis of textual data (King, 2004; Waring and Wainwright, 2008). The themes or codes could be extracted from literature, or emerge from the text itself, in any stage of data collection (i.e. before, during or after) (King, 2004; Ryan and Bernard, 2000). Irrespective of how the a priori themes or codes have been identified, a typical element of template analysis is the modification and revision of the template as the researcher reads and analyses the text (King, 2004). The practices listed in the Spens *et al.* (2014) framework were used as the themes for this analysis (see Table 1), as well as their differentiation of actors (grape growers, raw material suppliers, wine producers,

filler/packers, freight forwarders, freight operators, importers, finished goods distributor, wholesaler, retailer, final consumer) and process steps (grape production, wine production, packaging processes, distribution, the consumer phase, end of life). Further coding categories emerged from the data itself and enrich the analysis.

To ensure the trustworthiness of the data a snowballing approach was taken when gathering information from interviews where each interviewee was asked to recommend potential other interviewees. This approach offers the possibility to reach data saturation where the data from interviewees starts repeating itself. Template analysis also achieves trustworthiness through pattern matching and easier coding which strengthens the understanding of the underlying logic from the phenomenon (Yin, 2009; Stuart *et al.*, 2002; Bak, 2005). The data from this research also stems from of multiple cases also offers the possibility to contrast and compare data more effectively and improve the trustworthiness of the analysis. The coding itself was done by researchers knowledgeable of supply chain practices; to ensure inter-coder reliability and consistency a transcript was analysed and coded by the three coders and then evaluated and discussed before the rest of the material was coded.

## 5. DISCUSSION

Due to the varying degrees of complexity of actors but also activities in the wine supply chain, the analysis separates between different phases of wine supply chains: grape production, wine production, packaging processes, distribution, consumer phase and end of life. While the end of life phase remains at the background in the interviews, all the supply chain phases are present in both the case of small wineries and the one with the large multinational one.

### 5.1 Growing grapes

In the context of grape growing, for small wineries, the production process is centred on the quality of wine that can be achieved from the grapes, while taking into account specific customer requirements. The quantity produced is restricted and the emphasis is on creating an experience that sells out the supply. The product portfolio is adjusted to meet changing customer demand or to adjust to unfavourable weather. Grape growing might also be outsourced in order to obtain specific varieties of grapes or in case of a failed crop. This implies that grape growing can either be done by the small winery itself or by a preferred supplier with which it builds a strong relationship and sometimes both.

Grape growing can also be included in the strategy of small wineries. Indeed, sustainable farming practices can offer a differentiation in the market place both in terms of the product specification as well as to obtain environmental certifications which might attract a specific niche of clientele.

For larger wineries, grape growing can be done either on a large estate managed by the organization or done by small grape suppliers. In the case of small scale suppliers for large production, strategic supply chain partnerships must be built to insure and control appropriate grape quality. Large grape growing operations might also follow sustainable practices as these help in improving yields. Furthermore, large multinational companies have more supply alternatives and combinations available regarding both the origin and type of the grape, as well as the location of production and the process. These practices can hedge against risks in grape growing and production processes, making the larger producer less vulnerable to e.g. bad local grape crops. However, stability of its brand and product portfolio, the scale of operations and the supporting quality processes reduce the short-term flexibility.

It is also important to note that in general grape growing is affected by the location. The soil, yearly temperature and humidity will affect grape production. In certain areas high humidity make the production of large yields with high quality very costly due to the required sprays and hand picking while drier sunnier areas might require less spray and offer consistent grape quality that can be mechanically harvested.

## **5.2 Making wine**

When it comes to wine production, the small wineries live from the “sense of location”: they engage tightly with other actors within the local wine industry and might also buy grapes from the region and, it is their soil and their fruit that they bottle up as an experience for their customers to enjoy. This customer experience supports product differentiation strategies where small wineries go for high quality niche product that are innovative, have specific characteristics or are well adjusted to their local markets. Smaller wine producers in certain regions will collaborate horizontally to share knowledge, outsource certain activities to each other (buying grape, wine making services) and organize activities such as wine tours.

In the case of large wineries, production is complex and hard to plan although their size allows some flexibility. Large wineries might use standard process management tools like ERP systems to organize their planning and procurement. They also might collaborate with each other inside the industry and share information on different practices. Large wineries will usually aim to make high quality wines and as such manage their incoming grapes carefully and control the process to achieve good quality standards. Large wineries also have some leeway because of their size to try new products and branding strategies to increase their portfolio and diversify their wine making activities.

## **5.3 Packaging**

Packaging options for small wineries are limited by their direct sales approach. For large wineries packaging is more flexible and can take place at different points in the supply chain. This flexibility depends on their packaging suppliers and on the requirements of their customers. Indeed, certain packaging processes can follow a postponement strategy that allows adapting to the labelling requirements of the customer. Other customer requirement might be related to the type of glass, with light weight glass being preferred in the case of Australia.

There are though many packaging options, and different resultant configurations in the wine supply chain. The cases here did not include bulk shipments, however, nor packaging in different countries. Yet, temporary packaging includes barrels (e.g. for aging), and there are various packages involved in transportation and distribution, let alone cardboard to glass to PET bottle options for consumer packages.

## **5.4 Distribution**

When it comes to distribution, smaller wineries will use direct retail channels such as cellar doors, fairs, markets, wine shows, online purchases and distribution via mail service to engage their clients. Thus they manage production and retail themselves. They might also collaborate vertically with specific partners that can't retail their wines in an exclusive manner. In general they have a strong customer orientation and try to differentiate themselves and may rely on others. Their customer orientation can be seen in engaging directly with the client and expanding their client base through both boutique wine catering and tourism experience (with bus tours, degustation, food-wine pairing). To monitor their performance in distribution small wineries will look at basic financial KPIs or KPIs relevant to their activities (number of bus tours a month for example).

As for the large wine producers the distribution is more complex. Even though they might have a small proportion of sales through their cellar doors they will often orient their activities towards much larger customers and either integrate themselves with large retailers, deliver to large wholesalers or export their wine abroad. When it comes to national market distribution, large producers will often use freight forwarders and develop strategic supplier partnerships with them to gain visibility and integrate with them to monitor and troubleshoot shipping. They will also rely on or choose their freight forwarder's performance to support the requirements for the deliveries to their clients and will develop strong relationships directly with the retailer or wholesalers to aim for efficient distribution and warehousing. Large volumes push producers to strive towards standardization and simplifications of lines/SKUs – in labelling, blank stock and packaging materials. KPIs are fairly standard and will depend on the actual strategy, i.e. "best practice" and follows strategy-process-performance alignment. However, when the large producers tend to export they use FOB terms which limits the visibility of shipments towards the customer. Another issue that might limit visibility and integration with customers is the push by large retail groups to use farm gate pricing. It should also be noted that country distribution factors might play a role in how a large producer operates. Performing freight forwarders and good partners for export and import might affect the reliability of certain activities and orient the business processes in distribution.

## **5.5 Consumption**

For small wineries the consumer phase is important as it is part of the customer experience which creates value for the customer. In effect they are both the producer and the retailer. This allows a strong customer orientation where they interact directly with their customers and adapt their product offer to follow their taste and improve the customer's knowledge of their product. They also strive to improve the customer experience beyond only wine purchasing by including other services such as entertainment, cafes, food tasting, weddings, specialized services, special events and otherwise tourism related activities. They create relationships with the clients which help market boutique wine but they also find different ways of attracting clients to their retail points (cellar doors) either through tourism or fairs (wine medals) and aim for a combined market of tourism experience and local wine/food enthusiasts. They will often track a few metrics related to direct customer sales and ancillary tourism activity. Sometimes to attract a higher number of customers they will collaborate either in their customer experience activities and complement themselves either in their wine types.

Large wineries are often not involved in the consumption phase other than through brand management or through paying attention to trends and developments in their markets. From this information they will make forecasts to adapt their production levels and make to stock large volumes. The direct sales volumes are a small proportion of sales for the large multinational wine company. However, not only the grapes, but also the identity of the wine brand, is rooted to the soil and the company might show-case vineyards and wine making to attract consumers.

## **5.6 Other observed factors affecting wine supply chains**

Both the small scale wineries and the multinational wine corporation are vulnerable to disruptions arising from different sources. While the collaborative relationships within the local wine industry and the production processes at the heart of the small wineries can more flexibly absorb incremental risks, such as the ones proposed by the environment, for the large wine producer it is the sourcing and pricing practices arrived at through strategic supplier partnerships that can protect the supply chain from the adverse impacts of disruptions. While

the grape growing and wine production processes of the large multinational wine company are also prone to environmental risks, from the point of view of the supply chain as a whole, the role of unpredicted, man-made disruptions, such as dock strikes, were emphasized in the interviews.

### **5.7 Practices found in wine supply chains**

The “best practices” identified by Spens *et al.* (2014) (customer orientation, process integration, visibility, strategic supplier partnerships, level of information sharing, quality of information and collaboration) could be found in both the case of the small wineries and in the case of the multinational corporation. There was however also some evidence that the some of the practices were not relevant in the cases.

Table 2 summarizes examples of the supporting and contradicting evidence of supply chain practices in the two cases. A general conclusion from the comparison of the cases is that the smaller wineries have relatively short and simple supply chains, in which they perform many activities by themselves or by contracting out activities to partners with which they have close and personal relationships, in order to serve customers on a face-to-face and customer experience basis. Customer orientation, information sharing and collaboration (both horizontally and vertically) were important for the performance of the small wineries.

The large, multinational wine producer on the other hand had a much longer and more complex supply chain with many actors, and for example different distribution models for different countries to which products were exported. The volumes supplied to different markets require a large base of grape suppliers and in order to assure a standard quality, strategic supplier relationships have a greater importance than in the case of small wineries, and also visibility, quality of information and level of information sharing has important roles in the more complex supply chain. However, support for all best practices was found in the analysis in the case of the large wine producer.

*Table 2 Supporting and contradicting evidence for different supply chain practices*

Best practice	The large multinational wine producer	The group of small wine producers
Customer orientation	<p>Supporting evidence: focus on brand and standard qualities; use of postponement and customized packaging.</p> <p>Contradicting evidence: no demand management, only a focus on forecasting</p>	Supporting evidence: focus on creating a consumer experience.
Process integration	Supporting evidence: implementation of information system throughout regional divisions; integration of processes with large retail chains to reduce non-value added steps.	Contradicting evidence: the supply chain is simple with wine producers perform many activities and functions on their own.
Visibility	<p>Supporting evidence: visibility available with operating freight forwarders; visibility of performance with national retail firms.</p> <p>Contradicting evidence: lack of visibility in exports through the use of FOB incoterms.</p>	Supporting evidence: visibility available through transparency of relationships and mutual support
Strategic supplier partnerships	Supporting evidence: long-term relationships with grape growers, knowledge sharing, and quality control in order to achieve quality standards for different products and product categories	<p>Supporting evidence: Suppliers required palliating to disruptions.</p> <p>Contradicting evidence: suppliers selection based on (short) distance and grape availability</p>
Level of information sharing	Supporting evidence: for large national clients there is a strong level of information sharing to monitor performance.	Supporting evidence: sharing of techniques and knowledge across cluster members
Quality of information	Supporting evidence: for retail firms the high level of performance requires accurate information to troubleshoot issues; key performance indicators on the strategy are kept to follow strategy and performance alignment.	Supporting evidence: information sharing and customer teaching is part of the customer experience; some information relative to financial and marketing activities is tracked
Information integration intensity	Supporting evidence: for internal markets, strong linkages to major buyers to improve efficiency of processes.	Contradicting evidence: through direct sales there is little opportunities to reinforce linkages.
Collaboration	Supporting evidence: vertical collaboration with national retail chains to reduce useless materials handling.	Supporting evidence: Horizontal co-operation and sharing of information and knowledge between wine producers.

## 6. CONCLUSIONS

According to supply chain practice literature, supply chain practice differs across regions, industries, and time. This multiple case study focuses on the specificities of supply chain practice in the wine supply chain – as opposed to literature on supply chain practice overall – and further contrasts the supply chain practices of an MNC with a group of small winemakers.

Previously, Spens *et al.* (2014) have structured supply chain practices in terms of best practice vs. baseline practice. Their results of not finding certain best practices in wine supply chain literature - customer orientation, process integration, and supply chain visibility - formed the starting point of this study. A first and foremost conclusion of our study is that these best practices as well as environmental management, in fact, are key also in the wine supply chain, but are not discussed in supply chain terms. Rather, for example customer orientation is taken up in the light of trends in preferred taste, in wine tourism, and in a strong marketing focus overall. The mystery of best practice in the wine industry is thus partly, a semantic one. At the same time, the findings from the study corroborate that performance, while highlighted in production and the quality of the product, is less in focus in terms of efficiency and effectiveness in the supply chain. The wine supply chain is very manufacturing and marketing-focused, with distribution supporting these activities.

The results from the study indicate that there is a variety of wine producers, wine supply chains, wine supply strategies and supply chain performance. Also external factors such as climate and market structure could have an impact on performance. The differences in size, supply chain length, volumes and contexts of the two cases made it difficult to make comparison and draw precise conclusions on what constitutes best practices in wine supply chains – the low number of cases included in the study can therefore be seen as a limitation. Overall, however, differences in best practice seem to stem from the strategy of a winemaker, and its inherent choice of key performance indicators, rather than the industry alone. More, and more different practices, may be inherent to various companies and their supply chains in the wine industry. Further research is needed to discover their variety, and more importantly, the underlying factors contributing to this variety.

Divisions of best practice vs. baseline practice need to be adapted to the agro-food supply chain overall, and may differ between agro-food supply chains and e.g. services supply chains, but the division is otherwise rather robust. The focus on strategy and performance supports the idea of performance and practice alignment, though further studies are needed to understand whether it is strategy driving performance and practice, whether it is supply chain practice that translates to performance as e.g. postulated by Estampe *et al.* (2013) and Golicic and Smith (2013), or whether supply chain practice has a mediating effect on performance (Zhu *et al.*, 2012).

The study bears though important implications for supply chain management overall. It highlights the context-dependence of supply chain practices (as in Borgström, 2012), and establishes a link between supply chain strategy – performance – and practice. The alignment of these three could be studied more, not only from the perspective of wine supply chains. What is more, such an alignment is postulated in contingency theory, which has though not been applied much in supply chain management research, but could be helpful in uncovering situational, contingency factors that explain the context-dependence of supply chain practices.

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