

Using SSM to exploring supply chain relationships for a small wine producer: an interpretive case study

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Abstract

This research is part of a wider study that seeks to understand the nature of significant stakeholder perceptions as situated in the SA wine industry supply chain (SC) context. The focus is the South Australian industry micro, small and medium wine producers. It explores the complex relationships that exist within the supply chain of a number of case organisations and their perceived key stakeholders. The case presented examines how the SC of a micro producer operates in the Australian wine industry; who the perceived significant stakeholders are in their SC, why they are important; and what the implications are for their SC. SSM is the methodology used to explore the nature and significance of these relationships.

Introduction

Even though the supply chain (SC) and supply chain management (SCM) are not new concepts many organisations and industries are only just starting to recognise the importance of managing or exploiting their supply chains. The Australian wine industry is no exception. The Australian wine industry is growing at a phenomenal rate with a new winery launched every 49 hours (Winetitles 2004). A total of 1,798 wineries were listed in Australia in 2004, with the largest number (91%) falling in the micro, small and medium category. The wine industry has always been subject to such problems as the vagaries of climate affecting the supply of raw materials and changes in customer demand. More recently, whilst domestic markets remain relatively static, export markets are increasing each year. Whilst in 2001, 663 wine producers exported wine to 89 international markets (Winetitles 2002) in 2003 this had grown to 909 wine producers exporting wine to 111 international markets (Winetitles 2004). Whilst the Australian wine industry has invested heavily over the years in all aspects of wine cultivation and product quality, and its products continue to grow from strength to strength, there is evidence that other aspects of the

business have not developed in line with growth and changing needs. The growth of the industry and of exports has created a new set of business relationships within Australia and worldwide that has resulted in a more complex and dynamic supply chain for the industry. The wine industry's supply chain extends from its suppliers, which include grape growers, equipment suppliers (grape processing equipment, labels, bottles, vineyard mowers, etc) to its customers (wholesalers, retailers, the individual consumer of the wine). The industry bodies have identified potential for supply chain initiatives but there is little evidence to determine whether micro, small and medium wine producers are exploiting these opportunities.

Supply Chains (SC) and Supply Chain Management (SCM)

There are a number of definitions of supply chains and supply chain management which describe the stages involved in directly or indirectly filling a customer order, the parties involved (suppliers, manufacturers, transporters, warehouses, retailers and customers, and the functions or processes required (for example, new product development, marketing, operations, distribution, finance and customer service) to enable orders to be filled in the right quantities, at the right time, to the correct location and to customer satisfaction whilst minimising costs (Simchi-Levi, Kaminsky and Simchi-Levi 2000, Chopra and Meindl 2001, Baismeier 1996); reducing inventories and improving production performance (Challener 1999); and provide added value to customers and stakeholders (Jayaram and Vickery 2000, Handfield and Nichols 2002). Industries are also beginning to recognise the value of their customers and their knowledge of the market place (Prahalad and Ramawamy 2000, Chizzo 1998, Simchi-Levi et al 2000, Anderson et al 1997, Challener 1999). It is also considered that different products have different customer requirements and cannot be satisfied by a single supply chain strategy (Childerhouse and Towill 2000, Christopher 2000, Christopher and Towill 2000, 2001, Power, Fisher 1997). In Baatz (1995) it is suggested that conceptually the supply chain extends from "dirt to dirt". It begins 'when the raw material is extracted from the earth and ends when the product is reused or disposed of in a landfill'. The literature tends to agree that organisations can, at the very least, achieve efficiencies through their supply chains,

and much of the past literature has explored efficiencies in terms of internal business processes, logistics and optimal sourcing.

Quayle (2003) points out that there is limited literature on SMEs and supply chain management practices. He also points out that SMEs do not generally employ supply chain management. They view the supply chain as a one-way relationship in terms of the pressure that powerful customers place on them.

Methodology

This research sought to understand the significance of the supply chain and supply chain relationships to SA wine industry micro, small and medium wine producers. Soft Systems Methodology (SSM) was the chosen methodology to explore the case situation. The data for the research was gathered and analysed using the tools of SSM. SSM was used initially to examine the SC and SCM literature in order to produce a generic model of the SC and to identify SC issues and opportunities. It was considered there was sufficient literature to produce a generic model that would provide a framework for semi-structured interviews with wine producers. Data from key stakeholders was gathered mainly through semi-structured interviews. The interviews were exploratory in nature and participants were asked to explore their 'world views' of their supply chains.

Structure of research process

Stage 1	T₀	1.1	Development of wine industry – huge growth over 20 year period
Stage 2	T₁	2.1	Root definition of SC - from literature
		2.2	Activity model of simple SC – from literature
			Activity model of integrated SC – from literature
		2.3	Activity model/s of supply chain for wine producer – from literature – model reflecting researcher’s interests
		2.4	CATWOE
		2.5	Simple activity model used to structure interviews
Stage 3	T₂	3.1	Interviews conducted with wine producer
		3.2	Detailed activity model of SC for wine producer
		3.3	3 to 4 key stakeholders in SC identified by wine producer; wine producer identifies reasons for their choice of key stakeholders

		3.4 Rich pictures
		3.5 Root definitions
		3.6 Conceptual models
Stage 4	T ₃	4.1 Analysis

The case organisation

This company was chosen because of its size in terms of tonnage crushed (less than 20 tonnes), and its role as grape grower as well as producer. The company has two full-time staff members who are the owner/managers. One of the owner managers undertakes the role of viticulturalist and general administration and accounting whilst the other owner/manager manages the cellar door, marketing and sales. The business employs casual staff as needed for netting, picking, earth moving and tax accounting.

They produce a small range of table wines which they sell through their cellar door, to mail order customers, local restaurants and hotels. In addition they supply their wines to local B&Bs as part of a 'holiday package'. They also sponsor local events. They view their business as much a part of the tourism industry as the wine industry and, given they grow the grapes that they make into wine, also part of the agricultural industry. Certainly, the focus of their market is towards the tourism industry.

The company's supply chain

The elements to the supply chain were identified using CATWOE. Basden and Wood-Harper's (2002) 'A Philosophical Enrichment of CATWOE' was used to supplement the definitions and examples provided in Checkland and Scholes (1999).

Customers: Cellar door customers; B&Bs; Hotels; Bottle shops; Mail order customers; Restaurants; Wholesalers; Retailers; Auctioneers

Actors: Winery owner; Suppliers; Viticulturalist; Winemaker; Bottler; Labeller; Crusher; Distributors (wholesaler, retailer, auctioneer, etc); Transporter; Tax accountant; Bank; Wine industry bodies; Government bodies

Transformation: What? Why? How? From grape to glass. Figure 1 details the activities along the company's supply chain in terms of what they do. The business sources supplies (agricultural and production supplies), grows and harvests the grapes to produce quality wine for sale through a range of outlets. It monitors and controls resources (time, money, labour, services) on a day-to-day basis and forecasts and plans for future activities. This provides only a brief description and is discussed in more detail below.

Weltanschauung: Worldview of SC and SCM literature (logistics, purchasing, operations, marketing); VERSUS Worldview of government/wine industry bodies VERSUS Worldview of producer VERSUS Worldview of key stakeholders (as identified by each producer).

Owners: Winery owners, Wine producers (may be owners or may be contracted to produce wine – those contracted to produce wine give their reputation to the wine making – ownership).

Environmental constraints (or enablers): Government, local councils, climate, water shortage, taxation system, wine industry bodies.

The rich picture in figure 2 demonstrates the complexity of the business activities and the relationships between the parties to the supply chain.

Key stakeholders

The business identified as its key stakeholders the company they used to crush the grapes and store the wine during production, its suppliers, grape pickers and customers.

Crushing and storage

Most micro, small and to some extent medium wine producers do not have the space or the facilities to crush and then store their wine during production. They tend to outsource this activity. This can be a difficult process to manage given it is not always easy to forecast the exact time a grape will be ready to pick. An unexpected change in weather conditions can quite easily lead to an early or a later pick and crush. Crushing may only take a few hours each year but timing is important and the business has to rely on the goodwill of the outsourcing company in terms of a flexible schedule. This case organisation stores

its own containers at the outsourcing company and makes its own wine. It has on occasion used the expertise of the resident wine maker at the outsourcing company. The case organisation has a range of skills useful to the outsourcing company and provides its services in part payment for the services the outsourcing company provides. The case organisation views its relationship with this company as critical to the success of its business.

Suppliers

The case organisation recognises that the company does not achieve economies of scale from its suppliers and believes that there are ways that this could be achieved. One suggestion presented by the case organisation was the possibility of bulk purchasing through a regional group. However, they also commented that extensive organisation would be required to manage the process. Given micro, small and medium producers have limited resources it would rely on the goodwill and skill of one or more members who have little or no spare time for this type of activity. The case organisation also commented that it is extremely difficult to get a large number of businesses to agree on an approach. They had established an arrangement with a few other businesses to achieve some small savings. These businesses also supported each other when one of them found they needed urgent supplies.

Grape pickers

Grape picking is seasonal and grape pickers are required for only a very few days each year by the case organisation. They also need to know they have reliable pickers who may need to be available with limited notice given vagaries of the climate. There are agencies that supply grape pickers but the cost is often prohibitive for the smaller wine producers. The case organisation has cultivated a reliable group of casual pickers over a period of time. The case organisation not only has to train its grape pickers in picking, they must also comply with occupational health and safety requirements and thus train their pickers in safe working practices. To encourage their pickers to return each year they provide a good working environment and all food and refreshments each day.

Customers

The case organisation commented that 'if people don't drink wine then there's no reason to exist'. They believe that it is important to give the customer 'a whole wine experience as well as good value, good quality wines at a good price; good value for money'. If people are interested they will take them into the barrel room, explain the different processes, explain about the wine and how it is made. They believe it is important to establish a relationship with the customer and providing a quality experience as well as product.

Conclusions

The case organisation uses a range of external parties to support many of its business needs although not all of these have been discussed in this paper. Managing stakeholder relationships was a primary concern for this business. It had invested a large amount of time and energy in establishing good working relationships with what they perceived to be their key stakeholders. This is one of the key initiatives identified in the SC literature in terms of a successful supply chain.

Organisational learning and organisational knowledge were issues that were identified, not just in terms of key stakeholders, but also in terms of the extent of learning and knowledge that is required in the business. Government and industry rules and laws relating to what can be made, how it can be made, how it can be sold, where it can be sold, how it can be packaged, how it can be exported, taxation laws, occupational health and safety regulations are just some of areas identified by the case organisation. Some of the knowledge and skills is acquired from third parties but much is developed over time within the business.

Although the case organisation recognised the advantages that might be achieved through their supply chain in terms of efficiencies, they believed a considerable investment in time would be needed to exploit limited returns. Some efficiencies were achieved from relationships with other parties discussed earlier.

The view as represented in the literature explores primarily large, and sometimes medium sized businesses.

The wine industry is a complex industry. The number of parties to the supply chain of a micro wine producer is vast and the relationships complex. The level of knowledge and skills required to successfully manage a business of this size appears to be high. It may not always be possible to apply the 'savings' cited in the literature to small companies.

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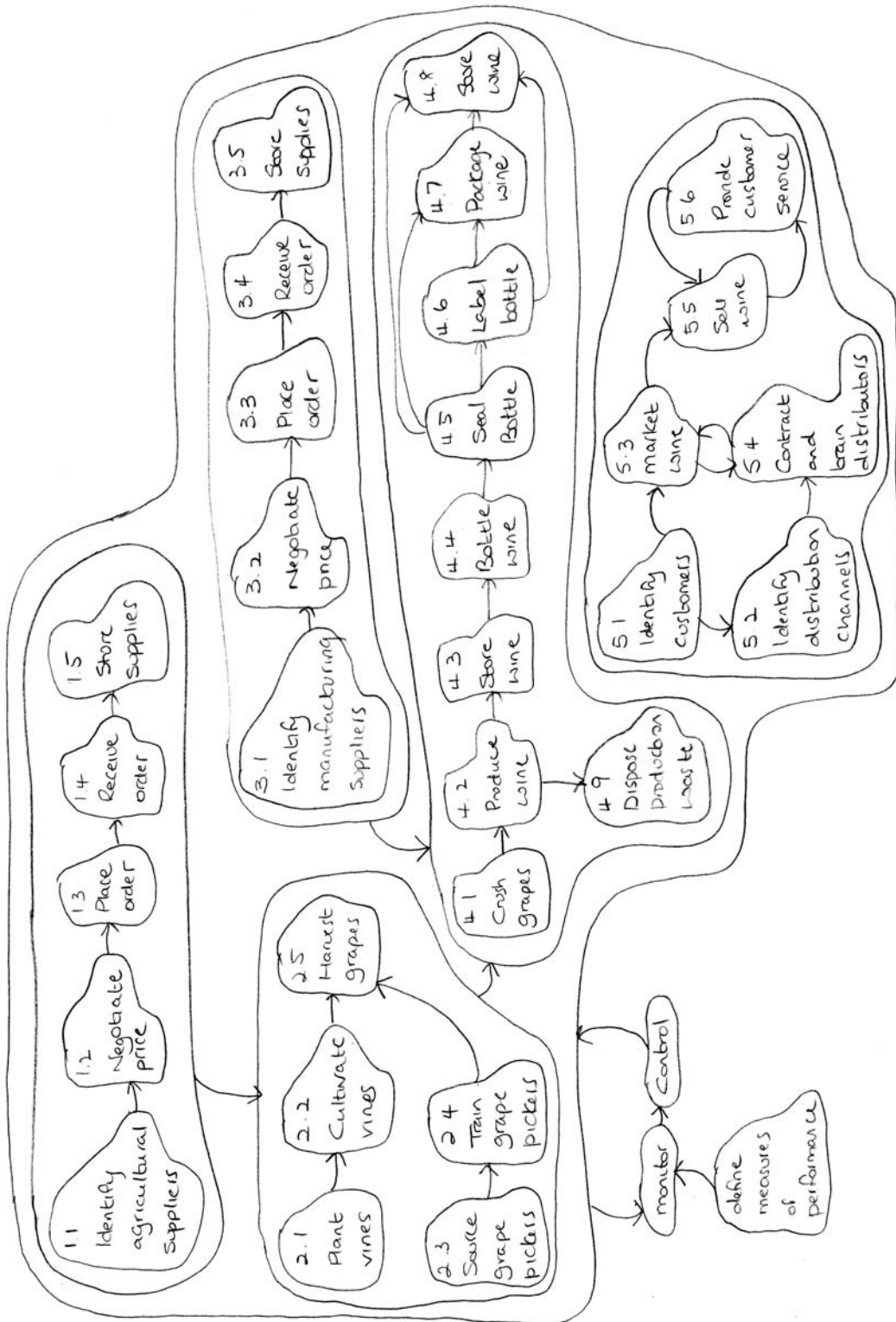


Figure 1: Detailed activity model of supply chain for wine producer

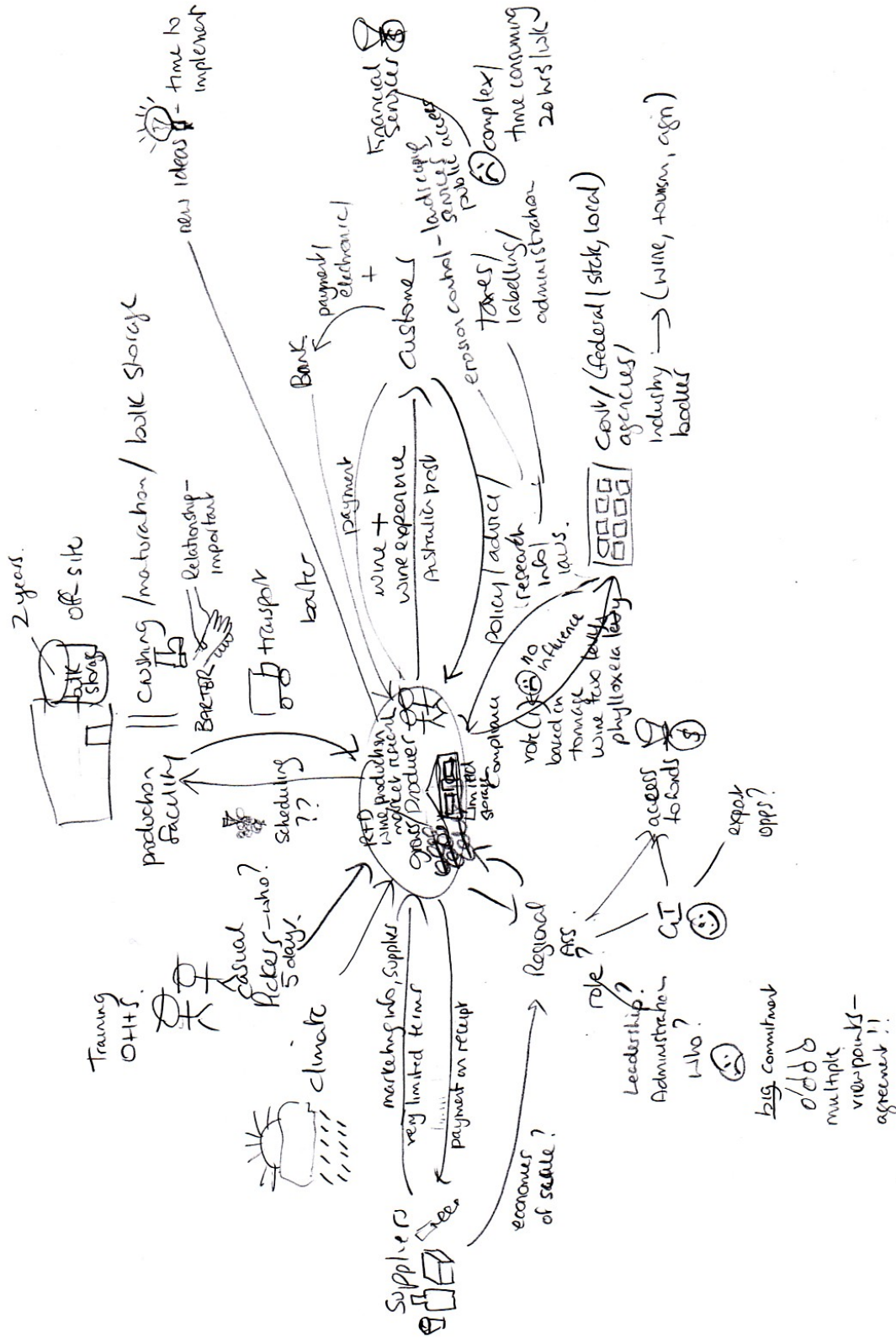


Figure 2 Rich picture for wine producer