Module 3: Supply Chain Management: Managing the Chain

Learning outcomes

On successful completion of this module you will be able to:

- Define supply chain management
- Describe the overall food supply chain structure in Australia
- Identify the components of effective supply chain management
- Outline the process of supply chain analysis

Learning resources

Reading

Fearne, A. 2008, *Sustainable food and wine value chains*, Adelaide Thinkers in Residence, Department of the Premier and Cabinet, Adelaide, SA – Available from here.

3.1 Introduction

This is the first of three modules looking specifically at supply chain management issues. Recall from Module 1 that effective supply chain management is a critical component of food marketing, that is, making sure that all activities throughout the supply chain are focused on delivering value to the consumer, as the consumer is the source wealth for all members of the value chain. The purpose of this first Supply Chain (SC) Module is to introduce the concept of supply chain management as it relates to food and describe the current macro structure of food supply chains in Australia. Next, the key components of effective supply chain management are discussed, including a discussion of potential barriers. The module concludes by outlining how to undertake an analysis of a supply chain to identify opportunities for improvements.

3.2 What is supply chain management?

Supply chain management is not consistently defined in theory or in practice. Definitions can vary depending on the discipline you come from and even within disciplines.

In ***marketing***, supply chain management is viewed as the 'place' element of the marketing mix, so concerned with distribution and the marketing channels a product goes through to get to the customer. Marketing focusses on the consumer and consumer needs as the starting point. A marketing text will talk about:

- The role of marketing channel members to add value by performing specialised functions the producer does not have skills in, so transport, storage, promotion, etc. and the flows of product, payment and information up and down the channel;
- Key decisions in channel management like how many levels in the channel, what alternative channels are viable, how intensive should distribution be;
- Channel power, that is, who controls the channel and how is conflict resolved; and finally
- Touch on issues around logistics of transport, warehousing and inventory management.

If you consider the ***supply chain management*** discipline, they often view marketing as the consumer facing part of the larger supply chain area. A definition of supply chain and supply chain management could include:

> The supply chain encompasses all activities associated with the flow and transformation of goods from the raw materials stage, through to the end user, as well as the associated information flows. Material and information flow both up and down the supply chain.
>
> Supply chain management (SCM) is the integration of these activities through improved supply chain relationships, to achieve a sustainable competitive advantage (Handfield and Nichols, 1998).

If you consider both of these views, you will see that the SCM focus is clearly on managing relationships throughout the chain and focussing on materials and information flow in both directions, that is from producers through to consumers and from consumers back to producers.

Traditional supply chains focussed on more of a push strategy that is, pushing product through as many channels as possible to consumers. Today, supply chain management focuses on the consumer as the driver for all supply chain decisions.

3.3 The food supply chain structure in Australia

Reading

Fearne, A. 2008, *Sustainable food and wine value chains*, Adelaide Thinkers in Residence, Department of the Premier and Cabinet, Adelaide, SA – Available from here.

Read pages 7 to 10 of the reading. You will note that the author (Fearne) differentiates supply chain management from what he calls value chain management. Further he focusses on 'sustainable' value chain management. He uses the term SCM to refer to traditional supply chains (with a push focus) and then uses the VCM terminology to describe the change to a focus on consumers.

In this course we use the terms SCM interchangeably with Fearne's VCM.

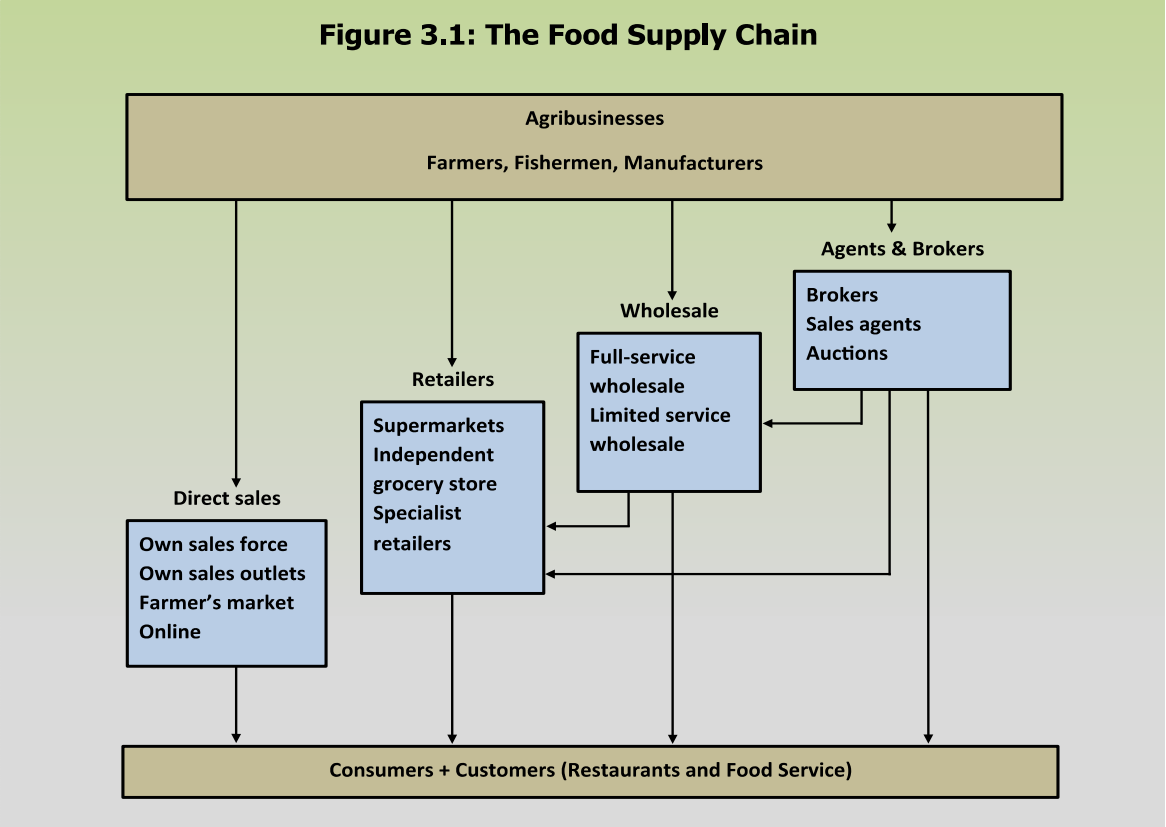
As you read through this section note specifically Fearnes' focus on the need for a SC to be consumer focussed and the important role of information as a critical success factor.

Also note the end result of a traditional SCM focus being a commoditisation of the product and a price spiral, whereas the modern SC (or VC) focusses on product differentiation and consumer value to achieve good returns.

Before considering the process of actually managing a food supply chain effectively, this topic will consider the major roles in a food supply chain and outline the current status of these roles in Australia as context for understanding the issues to be faced in managing food supply chains.

Figure 3.1 outlines the major stakeholders in food supply chains and outlines the multiple channels that can be used to get food from producers to consumers and customers. Producers will often use multiple channels (or supply chains) to try to reach as many consumers as possible. Each of these groups is overviewed next.

Figure 3.1: The Food Supply Chain



Activity

Before starting this topic, consider the industry/product you have selected to focus on for your Task 1 in this course. As you work through the course materials think of how each topic applies in your particular case.

Agribusinesses (fishers/farmers)

The Executive Summary from the IBISWorld industry report on ***Agribusiness*** in Australia highlights a few key issues including the predominance of family farms (i.e. small businesses); volatility due to forces of nature including drought, floods, and cyclones; increasing globalisation and growing global demand. The sector is diverse with meat, livestock and fish comprising 27% of industry value, followed by crops at 18.7%, fruit and vegetable at 11.8%, dairy at 8.7 % and poultry and eggs at 3.5% (Flores 2014).

> **Agribusiness in Australia: Executive Summary** (Flores 2014)
>
> The Agribusiness sector is highly diverse, made up of businesses that are engaged in various agricultural activities. Sector revenue exhibited moderate volatility over the past five years in light of adverse weather conditions. This has been partly mitigated by the fact that the sector encompasses a variety of industries that may withstand fluctuations at different times. Sector revenue is expected to grow at an annualised rate of 3.2% in the five years through 2013-14, to reach $206.9 billion. The sector has been supported by the emergence of the Asian middle class, whose rise in income and changing diets have prompted greater demand for high quality produce. The rising

income in developing nations increased demand for products such as meat and dairy, which has benefited the sector.

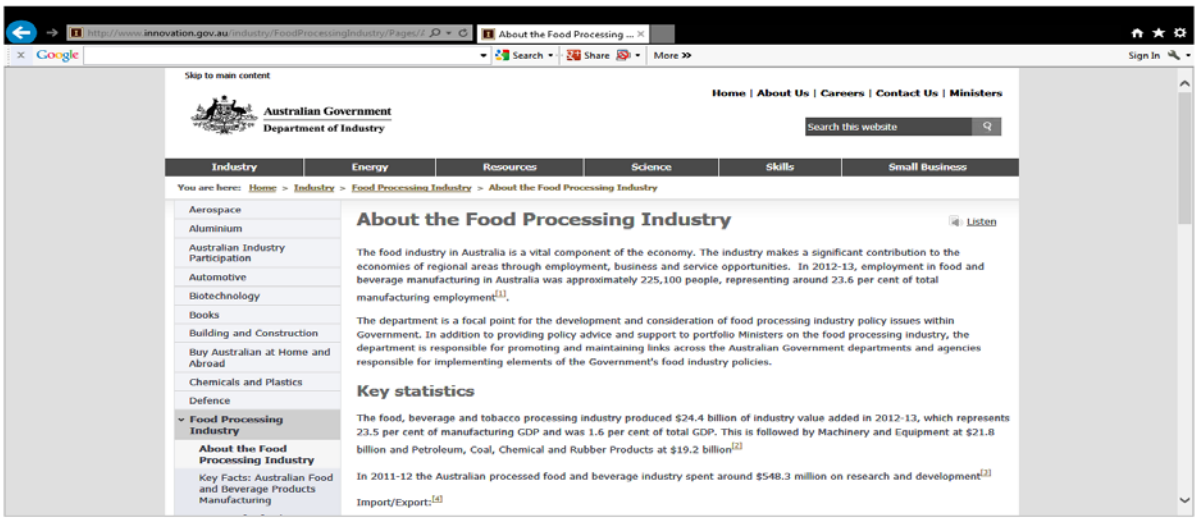
Multinational companies are increasingly becoming involved in agribusiness activity, often increasing their market share via acquisitions. Corporations are encouraging vertical integration across the sector. Family farms are still prevalent across the nation, though the revenue generated by corporate farms is substantially higher than that of traditional family farms. There is a trend of increasing capital intensity as players look to invest in infrastructure and equipment so as to mitigate rising wage costs and be globally competitive. The relatively high Australian dollar over most of the past five years has partly dampened exports, as it makes them more expensive for international consumers. Exchange rate variations are partly offset by the savings in imported inputs such as fertiliser and machinery, which are cheaper in light of a stronger dollar.

Rising global demand is projected to assist growth, especially for export markets such as South Korea, Japan, China, India and the United States, all of which are major growth areas for domestic produce. The depreciation of the Australian dollar is expected to support export growth. The trend of increasing capital intensity is projected to continue, as the focus on boosting efficiency to mitigate unit cost remains imperative in light of global competition.

Turning to ***food manufacturing***, 23.6 % of total manufacturing employment (approx. 225,100 people) is in food processing.

This website gives further information about the Food Processing Industry in Australia and includes links to several reports.

Website



Manufacturers

The following extract from the Food Processing Industry Strategy Group (2012) highlights some key features of the Australian food manufacturing industry:

> Since the Global Financial Crisis and in particular, over the last 12 months, the food processing industry, like other Australian manufacturing industries that are trade-exposed, has been tested by an ***increasingly competitive***

environment. A sustained ***high dollar*** and a ***highly concentrated retail environment*** have placed additional pressures on already modest profit margins. Productivity has been stagnant in many parts of the food chain and there has been an insufficient focus on expanding markets – the result of an industry in survival mode.

The industry is by no means homogeneous with over 238 sub-sectors and ***13,000 (mainly small) businesses***. This means that issues vary, and there is not one magic bullet that can improve productivity or increase demand for each sub-sector.

Australia is a comparatively ***expensive place to do business*** – labour, land and transport costs are high, with a rigorous regulatory environment which among other things protects consumers. A flow-on effect of these factors is comparatively high food costs. We have competitive advantages in good-quality, diverse and moderately priced beef, dairy, wheat, sugar and wine.

There are low barriers to business entry, so it is relatively easy to start a business. Australia's stable political system and growing economy provides a good foundation for industry.

An educated and culturally diverse population means that we have the potential to be successful. Low unemployment and high wages being offered in the resource sector make ***attracting and retaining skilled staff difficult*** in some areas. Food manufacturing companies are often major ***regional*** employers.

There is sufficient domestic population growth to sustain the industry, and Australia's population is growing faster than many advanced economies (expected population in 2050 is 33.9 million).

Despite these challenges, the Australian Food Industry has a unique opportunity to capitalise on opportunities in our region. It is critical that Australian manufactured foods ride the wave of the demand for Australian produce from Asia. Asia's incomes as well as its populations are growing, which means that Asians' desire for processed foods not just raw ingredients is growing. ***We export a significant amount of processed foods but the majority is not substantially transformed,*** reducing the potential benefit to Australians.

The phenomenon of working families and dietary changes mean that families of the burgeoning Asian middle-classes too are looking for convenient, safe and healthy food. The Australian brand is a trusted one and provides an ideal starting entry point into these growth markets.

In summary, many of the issues highlighted in this extract apply to all sectors of the food industry in Australia, for example, increasing competition, high expense of doing business and the difficulty of attracting and retaining skilled staff (who have been attracted to highly paying positions in the mining industry). However, two issues should be emphasised:

1. Similarly to the agribusiness sector, the food manufacturing sector is predominantly small businesses and
2. More importantly that while we export processed foods; these foods are not substantially transformed.

Wholesalers

> Wholesaling includes all the activities in selling goods or services to those who buy for resale or business use. It excludes manufacturers and farmers because they engage primarily in production and it excludes retailers (Kotler & Keller 2012, p. 483).

The food wholesaling industry in Australia has undergone significant changes in the past 5 to 10 years, driven by the bypassing (or disintermediation) of wholesaling, with major retailers increasingly going direct to producers and manufacturers. This is exacerbated by the high concentration in food retailing in Australia, with the two major retailing chains (Woolworths and Coles) accounting for over 70% of all food sold. This high concentration is not expected to increase – but rather with the entry of global companies like Aldi and Costco this may lessen.

Food wholesaling can be thought of in two main areas:

- The general line grocery wholesaling of a range of products; including canned foods, bread, cakes and pastries, dairy produce, frozen foods and fresh produce; and
- The specialist wholesaling of a single category or group of fresh produce items, for example seafood wholesaling, meat wholesaling etc.

Within the ***general line grocery*** wholesaling, three categories of wholesalers exist (Lev 2014):

1. Large wholesalers supplying the non-Woolworths/Coles retail sector (one company dominates this market – Metcash – who supply the IGA network)
2. Smaller wholesalers who supply speciality supermarkets (ethical/organic produce etc.); and
3. Wholesalers supplying the accommodation/food service sector, e.g. restaurants, hospitals, pubs (e.g. Bidvest and PFD). This sector is the strongest in terms of growth.

Three large wholesalers account for over 80% market share in the general grocery line wholesaling sector – Metcash (60.8%), Bidvest (11.4%) and PFD (8.2%).

Turning to ***speciality wholesaling***, the seafood industry represents an interesting case study of this area (with other fresh produce areas like meat and poultry displaying similar characteristics). According to Tonkin (2014):

- The seafood wholesaling industry is highly fragmented with no business with greater than a 3% market share.
- An overwhelming majority of seafood wholesalers employ less than 20 people.
- Profit margins are low (with little value add) and numbers of wholesalers are decreasing.
- The largest companies in this sector include the Sydney Fish Markets (2.6%); Tassal group (2%) and Raptis and Son (less than 1%).

Agents, brokers and auctions

Like wholesalers; agents, brokers and auctions provide a middleman function to link producers and customers/consumers. The key difference between agents and brokers and other middlemen is that unlike wholesalers, brokers and agents do not take title to the goods, they simply act as in a 'sales' role linking sellers and buyers and do not take on other functions like storage/transport etc. Brokers and agents operate in all sectors of the food industry, but are generally niche players offering specialised services in specialised products.

One successful agent in the seafood industry is Blue Harvest. Blue Harvest represents several producers from a variety of seafood sectors and then promotes and markets these products to the restaurant and food service sector, i.e. their main functions are promotion and sales, they never take ownership of the product. Listen to the YouTube for Sam's views on marketing in the seafood industry.

Retailers

Retailers are covered in detail in Module 5. In brief, the high concentration in the Australian food retailing sector has already been mentioned. In terms of supply chains, this has meant the large retailers exert considerable pressure on upstream supply chain members – often anecdotally dictating terms. This sector has been the focus of several ACCC inquiries in recent years.

Module 5 also covers other forms of retailing including direct channels from producers to consumers, the growing area of farmers markets and online selling; and the speciality retail sector. The speciality retail sector is again under pressure from the growth of supermarkets and in many sectors (like seafood) speciality retailers are decreasing in number.

Restaurants and food service

The final sector of the food industry to be considered is that of restaurants and other food service establishments like cafes, fast food outlets, hospitals, schools, catering companies etc. As indicated in Figure 3.1, this group are referred to as 'customers' (rather than consumers as they are buying food that will be transformed and on sold to final consumers).

In the restaurant sector, most businesses are small owner operators, while in catering and foodservice, larger companies hold considerable market share. While the small business may behave more like an individual consumer in terms of their food buying processes, the larger organisations use a business to business type approach. The restaurants have little control in the supply chain whereas the larger organisations have the ability to influence supply chain decisions.

In summary, this section has highlighted some key characteristic of the food supply chain in Australia. Interestingly, increasing production costs, decreasing selling prices, increasing power of chain retailers and increasing competition are common characteristics of agribusiness industries in many developed countries (Hingley, 2005; Taylor 2006). Notably, at all levels except retailing, the Australian industry is characterised by a predominance of small companies. Small producers often have a strong focus on production (i.e. inward looking), with little thought about what happens once a product leaves the farm. They also tend to resist collaboration (Mowat and Collins, 2000). When middlemen are also predominantly small businesses, the result is an industry that is characterised by opportunistic and adversarial trading, a lack of trust, and poor communication and information flow (Bonney, Clark, Collins, and Fearne,

2007). This provides a context for the next topic on the key components for successful supply chain management.

3.4 Components of effective supply chain management

So against this backdrop of small businesses exhibiting adversarial and competitive behaviours, how can successful supply chain management strategies be introduced?

According to Fearne et al. (2008) the four key elements for successful SCM are:

1. Strategic alignment: all members of the supply chain have to have common goals and work together
2. Transparency: relates to the efficient and timely flow of information throughout the supply chain
3. Relationship integrity: involves trust commitment and interdependence; and
4. Consumer insight: the whole chain needs to be working together to provide value to the consumer, and so needs to understand how and why consumers buy.

Reading

Fearne, A. 2008, *Sustainable food and wine value chains*, Adelaide Thinkers in Residence, Department of the Premier and Cabinet, Adelaide, SA – Available from here.

Read pages 10 to 14 of the reading. This section addresses in more detail the four key elements for successful SCM outlined above and outlines a framework of how these elements can work together.

He then discusses the fact that not all members of a supply chain will actually meet these criteria – so when developing a supply chain there is a need to start with the most likely candidates.

This section also covers five common barriers to implementing effective SCM:

- Not understanding the key role of 'consumer value'
- Planning horizon too short
- Complexity of determining what it is consumers value
- Silo mentality (between disciplines and functions) stifle innovation
- Costs of collaboration seen as prohibitive.

Fearne's paper finishes by giving some examples of successful SCM in a variety of contexts (both internationally and in Australia), and the strategies that assisted successful implementation, including:

- Focussing on relationships – including having staff embedded in upstream or downstream partners.
- Getting quick results through sales forecasting – retailers sharing data with suppliers to allow suppliers to more accurately forecast demand.
- Improving communication flows and trust through results – Fearnes describes the case of a Vietnamese wholesaler who went to the extent of providing fax machines to producers to improve communication.

Reading

Fearne, A. 2008, *Sustainable food and wine value chains*, Adelaide Thinkers in Residence, Department of the Premier and Cabinet, Adelaide, SA – Available from here.

Read pages 14 to 36 of the reading. These sections illustrate successful SCM cases as outlined above as well as then describing some specific South Australian food and wine SCM cases. The reading finishes with some recommendations to improve SCM in food chains.

Houston's Farm

From early beginnings as egg farmers in the 70's, to one of Australia's largest fresh salad growers today, Houston's Farm has always been dedicated, family owned and operated business. The company started producing a mere 6 cartons of whole head Icebergs a week supplied to local grocers in the 1990's (Houston's Farm 2013). Houston's Farm started suppling local restaurants in Tasmania and soon came under pressure to produce cut leaf products (YouTube 2011). Based in Cambridge, Tasmania, Houston's Farm is one of the few vertically integrated salad growers in Australia, producing products such as lettuce, spinach, beet and brassica leafy vegetables (Houston's Farm 2013). The move from whole leaf lettuce to washed cut leaf products gained popularity with consumers and soon gained interest from Woolworths and Coles.

Woolworths and Houston's Farm have since enjoyed a healthy business relationship for over forty years. Originally supply eggs to Woolworths in the 1970's, Houston's Farm later moved to supplying salads in the 1980's (Woolworths Supermarkets 2013). Currently Houston's Farm supplies 70 % of their own produce to Woolworths (Woolworths Supermarkets 2013). Woolworths liked the concept of cut leaf salad products and asked Houston's Farm if they could supply packed, ready to serve, washed and cut leaf salad mixes (Woolworths Supermarkets 2013).

Houston's won the inaugural Fresh Food Bursary from Woolworths allowing them to develop an industry standard for measuring carbon footprints (Lupo 2009). Houston's Farm's ability to recognise and meet industry demands through innovation and creativity has allowed them to secure their position as an industry leader that now employs over 100 staff.

Discussion Questions

1. Houston's Farm is an example of successful supply chain management – what are the key lessons from this company that could be used by other primary producers?

http://www.youtube.com/watch?v=0sN23Br2-dM

3.5 Supply Chain Analysis

Supply chain analysis is an effective and powerful tool as it focuses on the interface between participants in the chain (Bonney, Clark et al. 2007). It offers the potential to gain understanding of operational issues and problems, pressure points, bottlenecks in information flow, waste, lack of trust and commitment between firms and demonstrates strengths and weaknesses in the supply chain (Taylor 2005, Bonney, Clark et al. 2007).

Some key steps in a supply chain analysis include:

Step 1 - Engaging the Chain. In order to achieve success, engagement of the chain and corporate commitment is critical (Taylor 2005). Taylor recommended the development of a strategy to inform and engage senior management to ensure "buy-in" (Taylor 2006). Team building of a cross-company team has also been identified as an important step to a successful analysis (Zokaei & Hines 2007, Taylor & Fearne 2009).

Step 2 - Mapping the chain. Mapping of the chain is usually the first task for a SCA team, with analysis of individual facilities along the chain carried out (Taylor 2005). Mapping the chain aids in visualising all the processes in the chain, identifies waste, provides a visual map that all in the chain can understand and relate to, aids in making decisions on product flow apparent and forms the basis of an implementation plan for change (Rother and Shook 1999; Womack and Jones 2005; Bonney, Clark et al. 2007). The map shows the links between information flow and product flow and promotes the asking of key questions that when answered provide the answers to indicate how improvements can be made. Three key things are mapped at this stage, product flows, information flows and relationships.

> **Mapping Product flow.** The objective of mapping the product flow is to ensure the delivery of the correct volume and quality of the product desired by the consumer (Bonney, Clark et al. 2009), indeed the misalignment of supply and demand was one of the most serious problems discovered in many agri-business food chains (Taylor and Fearne 2006). Bonney, Clark et al. (2009) again analysed the product flow by determining areas that are value adding, necessary but non-value adding or wasteful.
>
> **Mapping Information flow.** Information flow that enables knowledge transfer between customers, suppliers and other stakeholders can empower firms to become competitive through information sharing. Traditionally, the transfer of information has been a difficult concept and is often limited to information of a transactional nature, being product and service related rather than of long term strategic planning, forecasts and product development, particularly in agri-business value chains (Al-Mudimigh et al. 2004). Provision of consumer demand information is able to improve efficiency in chain performance by aligning what the customer requires and the supply chain produces (Feller, Shunk et al. 2006).
>
> **Mapping Relationships.** Strongly linked to the flow of information across the value chain is collaboration and relationships within the chain. The transparency, inclusiveness and commitment between partners in the value chain strongly affects the dynamics of information flow on what consumers value (Soosay, Fearne et al. 2012). In chains where culture prevents information flow there is a major challenge to the applicability of the VCA (Taylor 2006). The agri-business sector particularly has faced challenges due to poor communication and limited flow of information that has characterised sectors of the industry. Poor communication and a lack of transparency due to a lack of trust and commitment between trading partners leads to poor information flow and inefficient operation of the value chain (Bonney, Clark et al. 2009).

Step 3 - Consumer Research. Value chain analysis (as a methodology) relies on defining consumer needs and wants and the translation of those needs and wants into an

output of a product of value to the consumer. Information flow and communication of the needs through the chain to the producer is of paramount importance.

Step 4 - Opportunities for Improvement. Identification of opportunities for improvement is a key process in value chain analysis. Lowering of the shared cost was the initial aim in the early value chain outlined by Porter (1985). Differentiation also grows out of links between buyer and seller. The value chain as a whole provides numerous and sustainable options for differentiation (Porter 1985), and innovation (Bonney, Clark et al. 2007). The identification of key wastes was also included in the later agri-food work in the UK by Taylor. Implementation of the identified opportunities is the final step in the process.

3.6 Conclusions

This module has presented a definition of supply chain and supply chain management as encompassing all the activities and processes to get a product from the producer to the customer or consumer. An overview of the Australian food industry was presented by sector which highlighted the high fragmentation throughout the chain, with the exception of the highly concentrated retail sector. On this basis, the key elements of successful SCM were outlined. The module concluded by outlining a process for analysing existing supply chains to identify opportunities for improvements.

Before moving to the next Module – reflect on the key decisions that have to be made about supply chain management in terms of business strategy.

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