Know-how for Horticulture™

Potato Value Chain Analysis

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Supply Chain STO

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Final Report

Potato Value Chain Analysis

PT05022

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STRATEGY TACTICS OPERATIONS

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1. Executive Summary

Like almost every other category of consumer goods, the market for fresh potatoes is dynamic and changing. However, Australia growers have, by and large, been diffident in embracing the market dynamics.

Consolidation is prevalent in every step of the supply chain for fresh potatoes. This consolidation is driving out much inefficiency; in fact, many growers perceive that much of the inefficiency in the supply chain is driven by the behaviour of merchants. This may have been true … ten years ago, but is not the case today.

There are many challenges facing potato growers; falling prices, rising input costs, increasingly sophisticated consumers, hard-nosed buyers, global trends … not to mention to vagaries and difficulties that have always existed in agriculture.

However, there is a bright future for some … those that will embrace the challenges of a dynamic and demanding market. The single biggest challenge facing growers is how to reverse, or at least halt, the downward trend in consumption of fresh potatoes.

There are many factors that have caused this but what is most surprising, is the apparent lack of a response from the people most affected – the grower.

Supply chain inefficiency is not a significant factor and even if it was, it is unlikely that growers would appropriate the value created.

The customer has largely been ignored for the past ten years, but not by the producers of substitute products, such as rice and pasta. Any industry that fails to communicate with its customers will find it difficult to prosper in the long term.

2. Summary of Findings

1 The Mass Merchants (Action, Aldi, Coles, Franklins and Woolworths) and the Independent Chains (AUR, FAL, Foodworks and IGA) control sales of the vast majority of fresh potatoes to end-users.

The supply chains to both these groups are largely efficient. This efficiency is being driven by these organisations. It is likely that any cost efficiencies created will be appropriated by retailers and ultimately end users, regardless of who creates the saving.

2 Supply chains to other retail outlets (Non Mass Merchant, non Independent) appear to be structurally inefficient.

There is strong evidence of physical flow of produce through multiple (1, 2 and sometimes 3) wholesale merchants. Removing these efficiencies will be difficult as the merchants "own" the relationships with the buyers. These relationships also play a very important market mediation role as they become an aggregation point for many small demands and very few large supplies. Good merchants also play a role in ensuring the disposal of most produce (even that which is normally considered unmarketable).

3 There is no reliable data on market size

The current estimates on market size are unreliable and appear contradictory. The best guess at market size is 550,000 tonnes at %565 million. This equates to an average price of $1,027 per tonne at retail – current retail prices are between $1,000 and $1,800 per tonne.

4 There is no reason to believe that growers can trap any additional "value" from the supply chain, unless they perform some value adding activities.

The apparent high retail price compared to the low farm-gate price may appear to be "unfair" to the growers – but that on its own is not sufficient grounds to improve grower returns.

5 The perception of "unfair" margins at retail does not seem to be sustainable.

Scan data and the costings developed in this document suggest that there is very little scope for profiteering by any member of the supply chain.

6 Global trends in retail are tending toward consolidation.

There is very little room for further consolidation in Australian retail, hence the interest of the major players in petrol and convenience, liquor and the pharmacy sectors.

If a truly global player decides to buy out one of the major Australian players the "game" will change significantly – neither of which can be considered a major player in a global sense.

Value-add produce is the future; fresh-cut and ready-to-eat are significant areas of growth. Large produce companies (e.g. Dole in the US) are beginning to treat fresh produce like Fast Moving Consumer Goods (FMCG).

Trade practices that FMCG companies currently enjoy are beginning to proliferate in fresh produce; slotting fees and other off-invoice charges will become the norm.

7 Global trends in wholesale are tending toward consolidation.

Retails are increasingly dealing directly with growers; this is now happening trans-nationally. Wholesalers are backward-integrating into growing to secure supply.

Large growers are forward integrating to fulfil traditional "merchant roles"

8 Global trends in growing are tending toward consolidation.

Farming is becoming corporatised; there are fewer small growers and more large growers. The number of growers Australia has declined in the last 10 years. The number of growers involved in vegetable production has declined faster than the average of all producers.

9 The significant problems facing growers are strategic (marketing) rather than supply chian issues.

Outside of Western Australia, growers have not invested any funds in marketing fresh potatoes in over ten years. Why this is considered acceptable practice is puzzling.

10 Australian growers will have to compete globally

Global sourcing has come to Australia. It has a positive aspect; effective and efficient operators are able to expand into global markets. A consequence of this is that they also have to be globally competitive.

Australia's tough quarantine regulations are increasingly viewed as a trade barrier by international trading partners. It is reasonable to assume that pressure will be increased to change regulations, when (we contend that it is only a matter of time) this eventuates, Australian potato growers will have to compete with growers in other countries.

3. Action Plan

We firmly believe that the significant problems facing growers are strategic rather than supply chian issues. Growers must take responsibility for their business and their market (it is *their* market; the retailers are merely the conduit between the grower and the consumer). The category (fresh potatoes) needs to be reinvigorated. Consumers need to be educated on the varieties available, their properties and characteristics. Growers who wish to succeed have the following options:

- Get Big;
  The whole industry is experiencing consolidation. The large retail chains want national (or at least regional) solutions. They are forcing FMCG practices into produce.
  In order to meet these needs, profitably, critical mass is a requirement.

- Go niche;
  This can take a number of forms such as growing small quantities of high value varieties or exclusive varieties.
  It may mean contract growing for a larger packer/merchant.
  It may mean some sort of co-operative arrangement with other growers to leverage supply-side economies on input costs and asset utilisation.
  It may mean some sort of co-operative arrangement for selling to the big chains.

- Branding;
  Possibly the most effective way of balancing the power or retailers is to own a brand (e.g. Coca Cola is an extreme example).
  This gives the brand-owner some leverage and influence over the end-user and brand image translates into better margins.

It is also abundantly clear that some serious research into the market is required. We fail to see how good decisions can be made, in the current market-information vacuum.

If none of these options appear palatable, it is probably best to exit the market.

4. Background

Horticulture Australia Limited (HAL) is a national research, development and marketing organisation that works with producer associations to develop programs that enhance the horticultural industry.

A consultancy brief was developed to undertake an analysis of domestic supply chains for the fresh potato industry. It was expected that the analyses would deliver "a comprehensive understanding of the structure and mechanics" of the Australian market for fresh potatoes.

Supply Chain STO (STO) responded to this brief with a proposal[1] that undertook to:

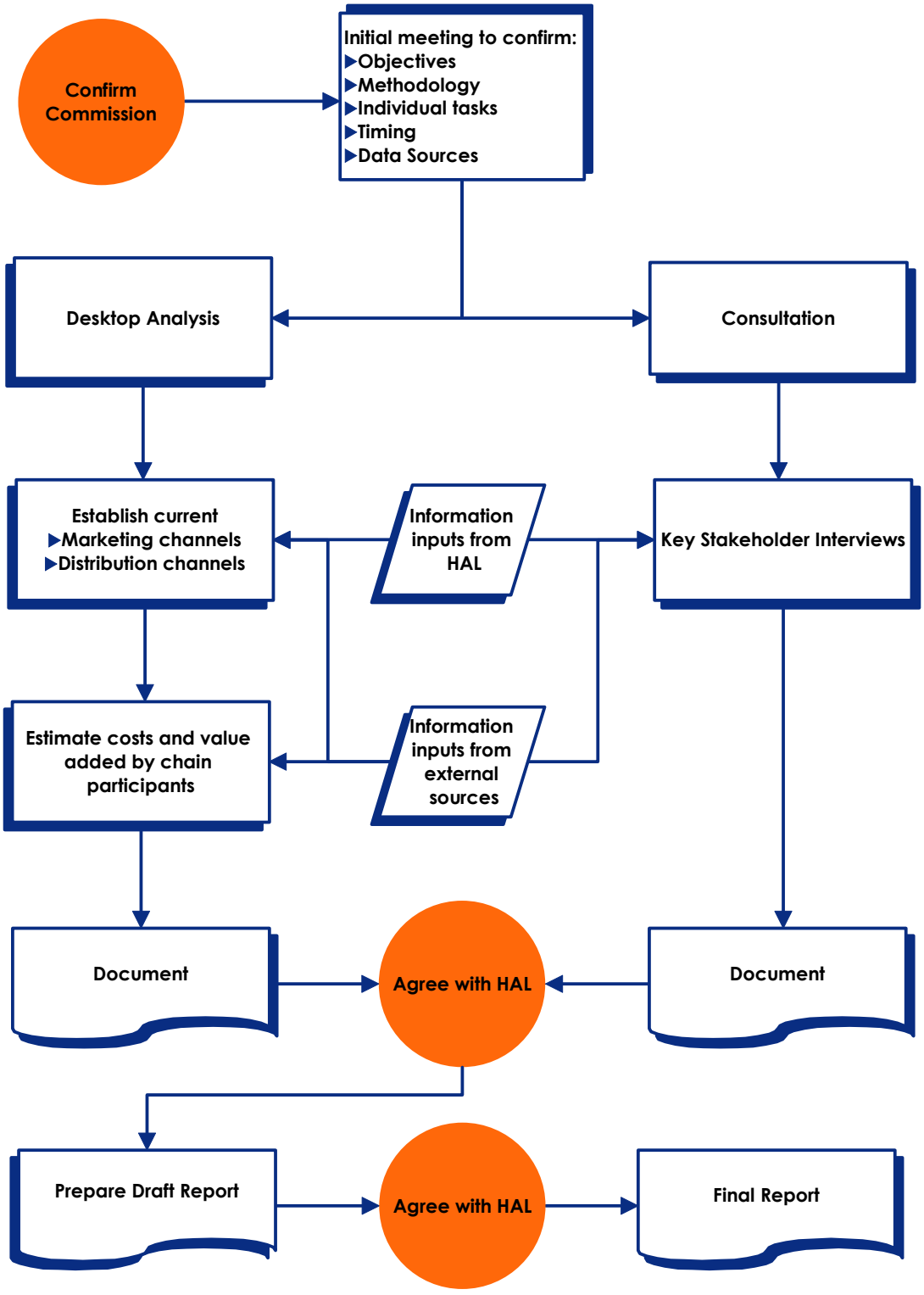
- Establish and Map Current Marketing & Distribution Channels;
- Establish service effectiveness and efficiency;
- Review global trends in growing, wholesaling and retailing.

4.1. METHODOLOGY

The methodology for this project was comprehensive; it is described in detail in the original proposal, an outline is included at Figure 1.

[1] Potato Value Chain Analysis PTO5022, 20 June 2005.

Figure 1: Outline Methodology



5. Channel Identification

The consultants held discussions with growers, wholesale merchants, packers and peak industry bodies in four states. It quickly became apparent that there is a great degree of commonality in channel configuration, regardless of geographic location. However, the costs in each channel can differ significantly, due in large part to:

- Grower efficiencies;
- Product quality;
- Yield per hectare;
- Proximity to packing facilities;
- Proximity to market and or distribution facilities.

At this point it is useful to understand cost behaviour and effect. The first three factors primarily influence grower profitability; an efficient grower should (assuming market-price is greater than the cost of production) be more profitable than a less efficient competitor. Similarly, a better quality product should fetch a better price, or at least generate less waste, and thereby increase grower revenues. Lastly, as yield increases, the cost per tonne of production will decrease and revenue will also increase. However, none of these factors alone will guarantee grower profitability; the product is a commodity and the price the grower receives is subject to the vagaries of supply and demand in the market, on any given day.

The last two factors, proximity to packing facilities, market and or distribution facilities, can have a profound bearing on supply chain costs. To get the product from the paddock to the packing facility and from the packing facility to the market or distribution centre requires some form of transport. The prime cost drivers of transport are distance and volume.[2] Obviously, transport costs are directly proportional to the distance between the paddock and the packing facility. This is also true for the transport cost between the packing facility and the market or distribution centre.

[2] Ballou, R.H. 1999, *Business Logistics Management*, 4th edn, Prentice Hall, New Jersey, p. 153

Given all these factors, the development of channel maps that are costed with great accuracy, is not feasible (we also believe that their use would be somewhat limited).

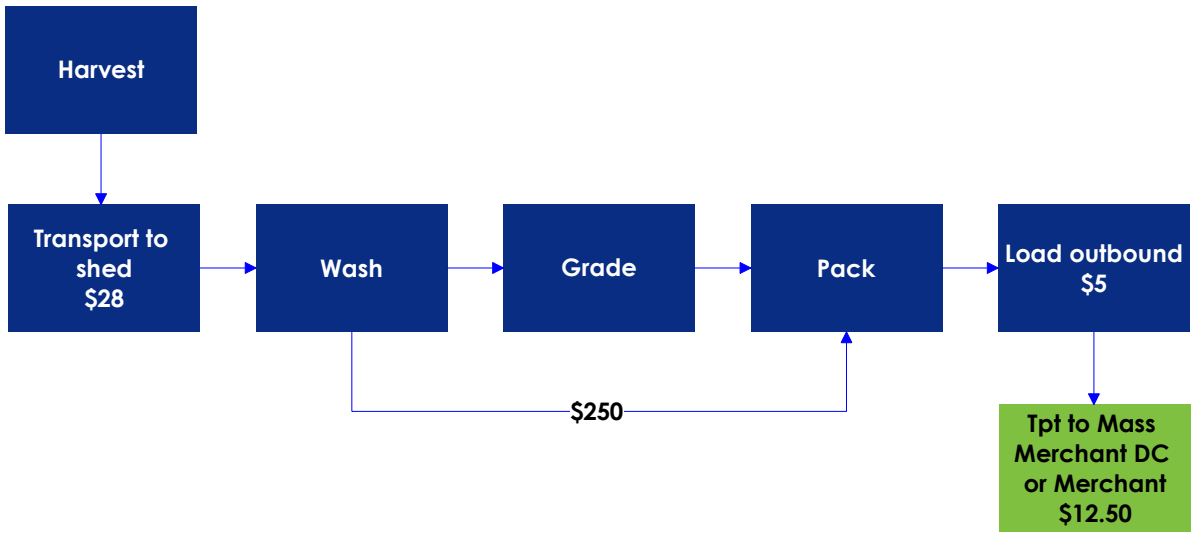
The efficiency, quality and yield a grower enjoys will create competitive advantage for that grower. A grower that is geographically close to a market has a natural competitive advantage over a more remote competitor. In order to "control" for these factors, we have developed a series of channel maps and indicated average costs for the individual functions.

Individual growers may find these maps to be a useful template to develop and understand the total costs within the supply chains they currently utilise. Regardless of the geographic location of the various entities within the identified chains, a number of common threads are apparent and are described in the following sections.

5.1. Grower Activities

The first common thread identified by the consultants is grower activities, illustrated in Figure 2. The assumptions underpinning each cost are described below. All costs are given as a cost per tonne.

Figure 2: Common Thread 1 - Grower Activities



- Harvest;
  As the cost of harvest is largely dependent on non-supply chain activities, it is discarded for the purpose of this exercise. A grower wishing to understand total chain costs would, in all likelihood, wish to include this cost.
- Transport to shed;
  It is assumed that it takes four hours to load the truck, travel from the paddock to the packing shed, unload the truck, and return empty.[3]
- Wash, Grade, Pack;
  Depending on process – wash, pack or pre-pack or carton pack, including, materials.[4]
- Load Outbound;
  Cost of loading 20 pallets.[5]
- Transport to Mass Merchant DC or Merchant;
  Assumes 4 hour round trip at $75 per hour for a 24 tonne payload.

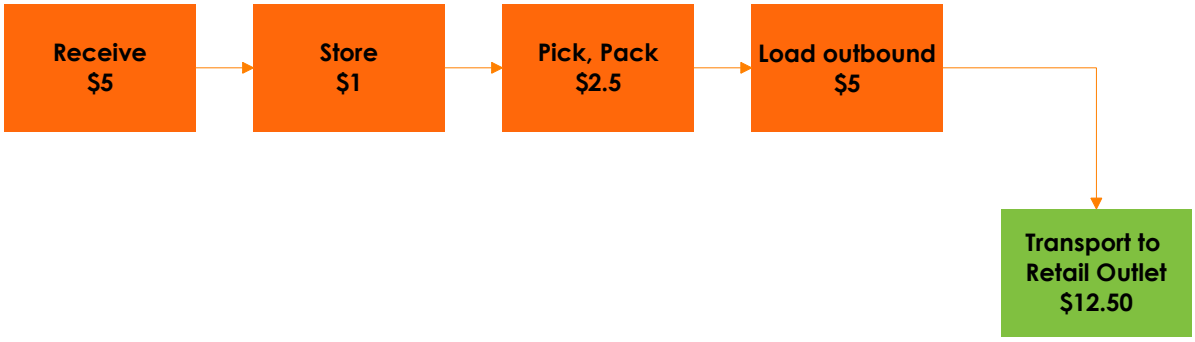
[3] Source: Information provided to the consultants by Zerella Holdings Pty Ltd.
[4] Source: See Note 3. If product is brushed only and packed into 50kg bags, the cost is approx $100 per tonne
[5] Source: Quote provided by Toll Transport to the consultants for Loading Outbound and Transport.

The total average cost for Common Thread 1 is $295.50 per tonne for washed and packed product, or $145.50 for bulk packed brushed product.

5.2. Mass Merchant/Merchant Activities

The second common thread identified by the consultants is Mass Merchant Distribution Centre activities and or Wholesale Merchant activities that take place at a produce market. These are illustrated in Figure 3. The assumptions underpinning each cost are described below. Again, costs are given as a cost per tonne.

Figure 3: Mass Merchant/Merchant Activities



- Receive;[6]
  Includes unloading and receipting into warehouse management system, cost of put away.
- Store;
  Based on 1 days storage.
- Pick, Pack;
  Cost of generating pick slip, picking order and placing it in consolidation bay.
- Load Outbound;
  Loading trailer.
- Transport to Retail Outlet
  Assumes 4 hour round trip at $75 per hour for 24 tonne payload.

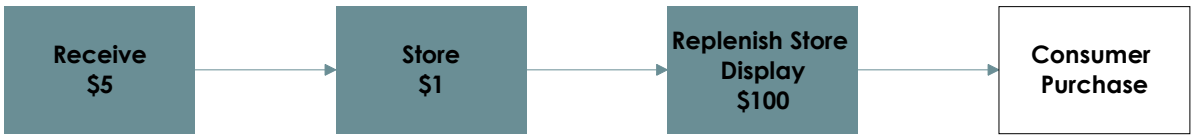
The total average cost for Common Thread 2 is $26.00 per tonne.

[6] Source: Quote provided by Toll Transport to the consultants for all Mass Merchant/Merchant Activities.

5.3. Retail Store Activities

The third common thread identified by the consultants is Retail Store activities. These are illustrated in Figure 4. The assumptions underpinning each cost are described below. Again, costs are given as a cost per tonne.

Figure 4: Retail Store Activities



- Receive;[7]
  Includes unloading and receipting into store stock management system, cost of put away.
- Store;
  Based on 1 days storage.
- Replenish Store Display - the last 50 metres, includes;
  Monitoring minimum display levels,
  Merchandising,
  Removal and disposal of packaging.

The estimate of $100 per tonne may appear high, however, it is "estimated that 50% of the logistics costs in a retail supply chain are incurred in the Last 50 Metres"[8] Other sources state "The "last 50 yards" from back door to shelf incurs almost as much cost as the RDC [Retail Distribution Centre] plus transport to store"[9]. According to IGD Services Ltd:[10]

> *"When availability is measured along the supply chain it deteriorates closer to the shopper. Despite a service level of 99% from the supplier to the retailer's distribution centre it is often down to as low as 90% by the time it goes from the stock room to the in-store fixture. This highlights the importance of availability in the last 50 yards."*

[7] Source: Quote provided by Toll Transport to the consultants for all Mass Merchant/Merchant Activities.
[8] The Institute of Operations Management (http://www.littoralis.info/iom/htm/iom20050617.362550.htm)
[9] The retailers' solution to back-store chaos - at their suppliers' expense, Food Manufacture, July 2002
[10] http://www.igd.org.uk/CIR.asp?menuid=83&cirid=1149

While it is difficult to place an exact cost for this function, "recent surveys [in the UK] suggest that lack of on shelf availability costs retailers around £2.6 billion a year".[11]

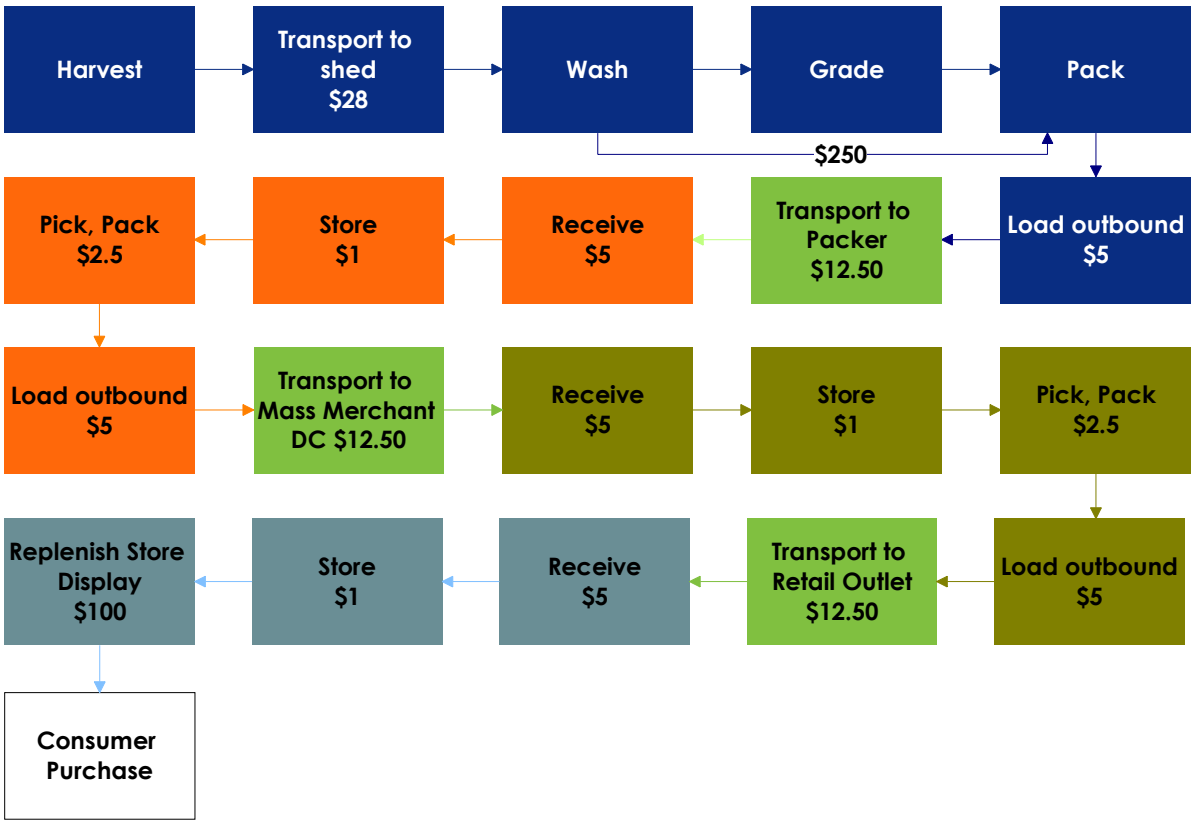
Therefore, our estimate of the minimum costs associated with retail store activities is $106 per tonne. The consultants believe that this may be conservative.

[11] See note 8

5.4. The Mass Merchant Supply Chain

In construction of a typical Mass Merchant Supply Chain, we suggest that it will be a combination of the three common threads outlined in the previous section. In all likelihood, a hybrid of Common threads 1 and 2 will also occur if 50 kg bags from the farm have to be broken down and repacked into smaller customer-friendly sizes. We propose the following (Figure 5) as a typical mass merchant supply chain.

Figure 5: Typical Mass Merchant Supply Chain



The total supply chain costs are in the region of $450.00 per tonne. However, these costs do not include the costs associated with quality control, overhead and margin at each level.

These costs are not trivial. It is estimated that the volume of product lost from paddock to retail display can be as much as 15%.[12] The bulk of this loss will be at retail price (i.e. $1,800 per tonne) rather than farm gate price ($400 per tonne). This does not include the cost associated with quality checks performed at each echelon.

During the course of the consultancy, a senior industry figure suggested the following as typical prices per tonne at each echelon:

- At the Farm Gate $400 per tonne;
- At the Packing Shed $800 per tonne;
- At Wholesale $1,200 per tonne;
- At retail $1,800 per tonne - $1,000 if brushed.

If logistics cost make up $450 per tonne and product loss costs $270 per tonne ($180 for brushed), the remaining $1,130 (probably less than $700 per tonne for brushed product, given that the cost of washing and packing is less) has to cover production cost, plus overhead, quality control and margin for each industry player. These numbers suggest very little room for profiteering at any level.

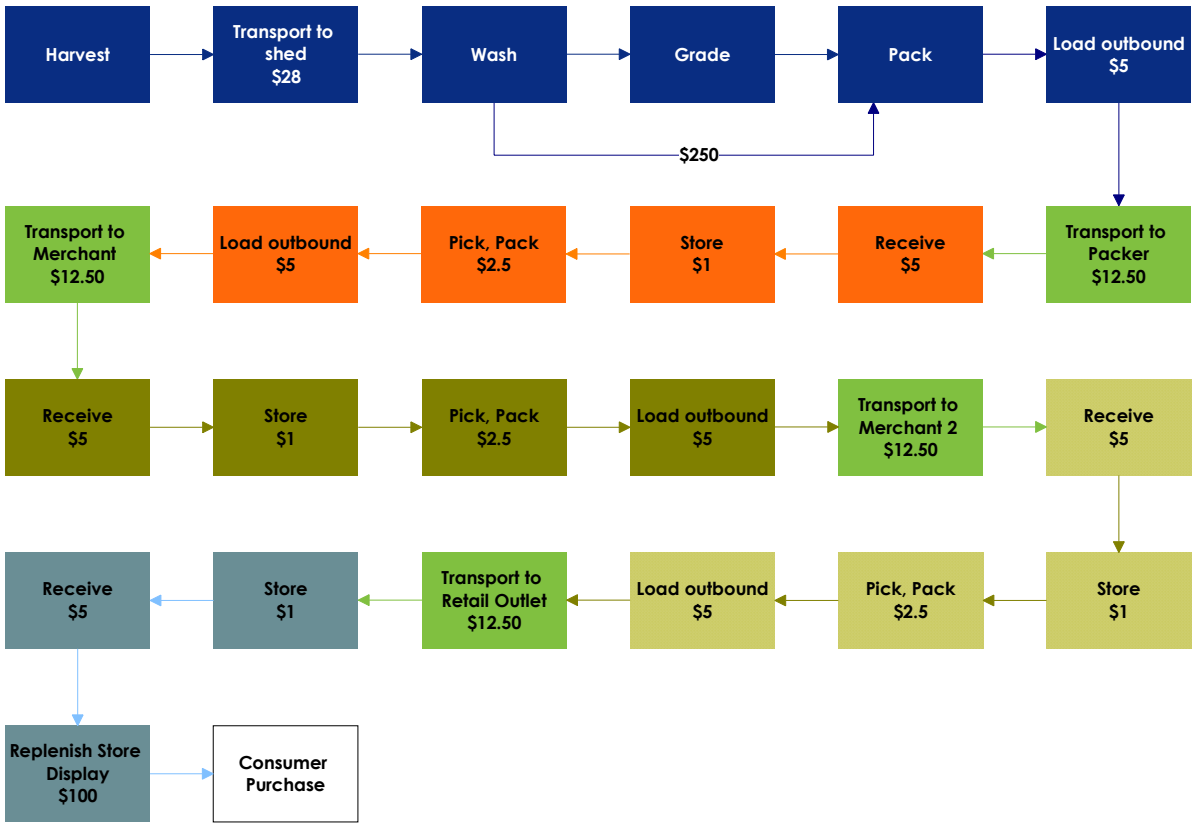
[12] Source: Unpublished correspondence from Western Potatoes to the Consultants.

5.5. The Small Retail Supply Chain

The Small retail supply chain is a variant of the Mass Merchant supply chain but can involve two or three additional echelons (usually wholesale merchants). Additionally, some of the functions carried out by packers may actually be carried out at the retail store. For example, many smaller green grocers will use their own staff to "pre-pack" potatoes into smaller customer-friendly packages (e.g. 1kg bags).

Given the diversity that may exist at this level and the size of this market (see section 6.2.2), developing anything beyond a "generic" supply chain is impractical and of limited use. Therefore, we have produced two variants that, in all likelihood, will cover the vast majority of the business that is not transacted with Mass Merchants or the large Independent groups.

Figure 6: Small Retail 01 - two merchants



While it is accepted that the order of events in these multi-echelon chains is likely to

be somewhat different than depicted, the important point is, that each event does take place and that the cost of each event must be met. Deciding which organisation bears which cost is likely to be resolved based on the depth and quality of the relationships between the individual players.

Our estimate for the logistics cost of Small Retail 01 is $480 per tonne (Figure 6) and $505 per tonne for Small Retail 02 (Figure 7). If the product is brushed, rather than washed, $150 per tonne can be deducted from these estimates

Figure 7: Small Retail 02 – three merchants

6. Service

6.1. Retail Market Size

The Mass Merchants control 79% Share of Trade in "All Defined Grocery" sector[13]. The remaining 21% is controlled by Independent chains. The Australian Bureau of Statistics (ABS) estimate that total supermarket sales to June 2004 were at $55,136 million[14]. The annual reports of the major players at the end of financial 2004 stated their revenues as follows:

- Coles/Bi-Lo $17,969 million (includes liquor)
- Woolworths $21,998 (includes liquor)
- Franklins $858 million
- Action $1,330 million
- Aldi $1,378 million[15]

Therefore the Mass Merchants control an estimated $43,533 million or 79% of the Supermarkets and grocery stores category as show in Table 1. This leaves the Independents in control of the remaining $11,603 million in the Supermarkets and grocery stores and "Other Food Retailing" in control of $ 8,087 million.

Table 1: Australian food retail market share, by outlet category, 2003-04.[16]

Outlet Type	Revenue Millions	% Share
Supermarkets and grocery stores	$ 55,136	62%
Cafes and restaurants	$ 11,634	13%
Takeaway food outlets	$ 8,556	10%
Other food retailing[17]	$ 8,087	9%
Liquor retailing	$ 5,322	6%
Total food and liquor retailing	$ 88,735	

[13] Source: AC Nielsen Scan Track quoted in Retail World's Australasian Grocery Guide 2004, 14 edn.
[14] Adapted from Australian Bureau of Statistics data series 850103.
[15] AC Nielsen estimate Aldi's market share at 2.5% (source: ACNielsen 2004, AC Nielsen Grocery Report 2004, AC Nielsen Australia, Macquarie Park, Sydney (www.acnielsen.com.au/MRI_pages.asp?MRIID=4). This figure is 2.5% of the $55,136 million quoted in note 5
[16] See note 5.
[17] Mainly delicatessens, butcher shops and greengrocers

6.2. Market for Fresh Potatoes

Current estimates for the Fresh Potato market segment are, in our opinion, unreliable. During the course of this study we have become aware of two recent reports[18&19] that put the market size of retail fresh potatoes at $565 million. This represents 1% of total supermarket sales (based on the ABS figures quoted at note 14).

This figure ($565 million) has its genesis in a presentation to the World Potato Conference[20] that gave the fresh potato market at 550,000 tonnes. We have interviewed the author of this report during the course of this project. He has stated that this is his estimate. It is not supported by quantitative research.

In their report to HAL, Market Equity P/L[21] took scan data (provided by HAL) that represented sales from Woolworths/Safeway at $197.7 million and estimated their market share at 35%. If $197.7 million equals 35% of the market, the total market must be $565 million – or an average of $1,027 per tonne!

We appreciate that Market Equity had very little to go on and needed some estimate of market size. However, we believe that the lack of adequate research on the market size speaks volumes – producers of Fast Moving Consumer Goods (FMCG) spend large amounts of money, every year, collecting, analysing and using these data as an aid to decision-making.

In order to get some idea of the value of the major marketing channels we have assumed that sales of potatoes roughly follow the total sales figures for "All Defined Grocery" proportionately. If this is the case, the breakdown across Outlet Type is something like:

- Mass Merchants $389 million
- Independents $104 million
- Other $ 72 million

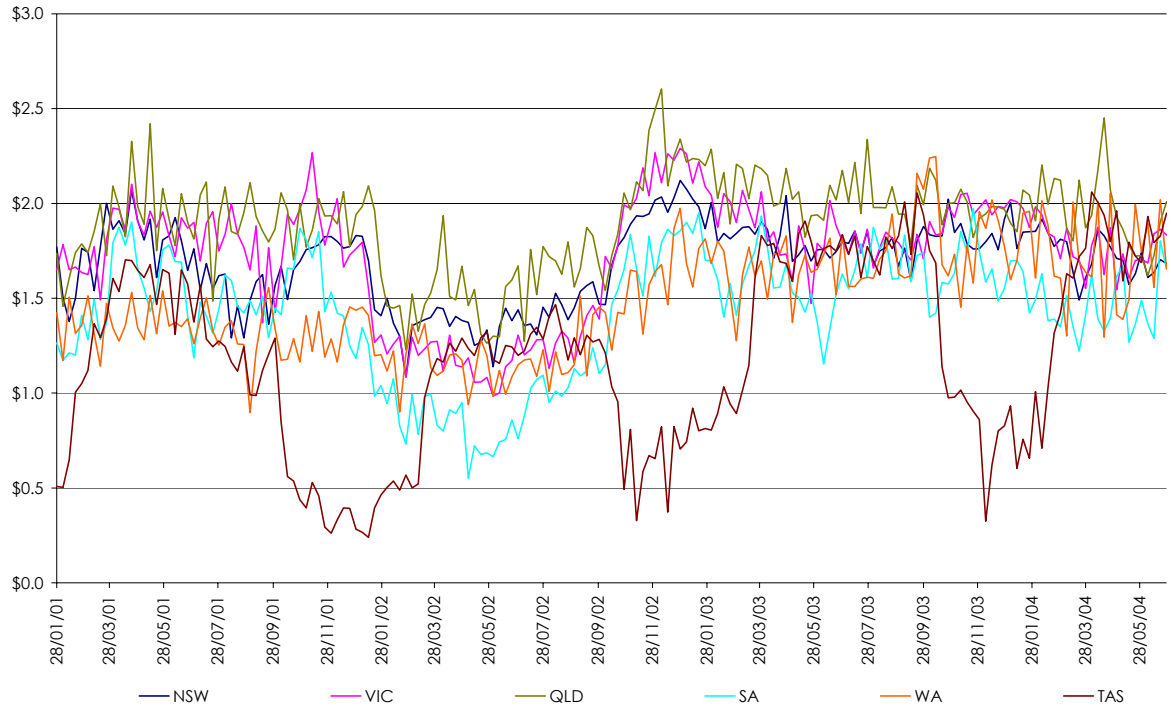
[18] Developing a Marketing Strategy for The Australian Potato Industry, Market Equity Pty Ltd. 2005.
[19] The Queensland Potato Industry - A Strategic Assessment, Condor Agribusiness Consulting July 2005
[20] Rich, J & Gall, R. Australia and New Zealand Potato Report March 2004 (http://www.potatocongress.org/sub.cfm?source=257)
[21] See note 7.

These estimates are not reliable but may crudely indicate the proportion of fresh potato sales by outlet type (*we respectfully request that any person or organisation refrain from representing these data as fact)*.

6.2.1. Scan Data

The consultants were provided with Woolworth's/Safeway scan data from 28th Jan 2001 up to an including 27 Jun 2004 (179 consecutive weeks, or just over 3½ years). With the exception of Tasmania, the price of potatoes

Figure 8: Weekly Price of Potatoes at Woolworths/Safeway



With the exception of Tasmania, the average price from these scan data, has not exhibited a great deal of variability. There appears to be a profound seasonal collapse in the price of potatoes, in Tasmania, that occurs approximately in the first week of September and continues again approximately, until the beginning of March. We also note that Tasmania appears to enjoy the lowest retail prices in the country, while in all other states, prices tend to be moving toward a peak (As this is beyond the scope of this study, we have not investigated further).

Further analysis was carried out on the scan data in an effort to gain further insight

into the sate and size of the market. The information in Table 2 clearly demonstrates that the there is, in fact, relatively little variation in price, over the 3 ½ year period.

Table 2: Descriptive Statistics - Potato Sales Jan 2001 - Jun 2004

	NSW	VIC	QLD	SA	WA	TAS
Mean	$ 1.69	$ 1.73	$ 1.90	$ 1.43	$ 1.49	$ 1.20
Stdev	$ 0.21	$ 0.31	$ 0.25	$ 0.32	$ 0.29	$ 0.49
Cov	12%	18%	13%	23%	19%	41%
Highest	$ 2.12	$ 2.29	$ 2.60	$ 1.97	$ 2.25	$ 2.06
Lowest	$ 1.08	$ 0.98	$ 1.23	$ 0.55	$ 0.90	$ 0.24
Difference	$ 1.04	$ 1.31	$ 1.38	$ 1.42	$ 1.35	$ 1.82

The Mean price is a straight forward calculation that computes the average weekly price per kilogram. The Standard Deviation measures of how widely values are dispersed from the average, as the number increases, so does the variation. The Coefficient of Variation expresses the standard deviation as a percentage of the mean. This is useful as it allows us to compare data sets that have different means and different standard deviations.

As Table 2 demonstrates, the coefficient of variation in in NSW, Victoria, Queenslad and Western Australia are in a reasonably tight range. South Australia is a little higher, but not of great concern. The profound price drop seen in the graph for Tasmania, is highlighted here – Tasmania has the lowest average price and the greatest price variation.

The final three calculations show the highest and lowest price in each sate, and the difference between the highest and lowest price.

In an effort to understand the market at it's "most recent" we re-computed these statistics over the last 12 month period of the data sets (Table 3). The results are telling.

The average price per kilogram in NSW, Victoria and Queensland increased by around 5 per cent. In South Australia the increase is closer to 10 percent. While in Western Australia, the increase is just under 20 percent and Tasmania just over 20 percent.

Table 3: Descriptive Statistics - Potato Sales Jul 2003 - Jun 2004

	NSW	VIC	QLD	SA	WA	TAS
Mean	$ 1.77	$ 1.83	$ 1.98	$ 1.57	$ 1.75	$ 1.45
Stdev	$ 0.11	$ 0.13	$ 0.16	$ 0.18	$ 0.23	$ 0.48
Cov	6%	7%	8%	11%	13%	33%
Highest	$ 2.02	$ 2.05	$ 2.45	$ 1.97	$ 2.25	$ 2.06
Lowest	$ 1.49	$ 1.54	$ 1.62	$ 1.22	$ 1.30	$ 0.33
Difference	$ 0.53	$ 0.51	$ 0.83	$ 0.75	$ 0.95	$ 1.73

However, the most telling figurers are Coefficient of Variation and the difference between the highest and lowest prices obtained. With the exception of Western Australia, both of these statistics have reduced significantly. The already reasonably tight distribution of prices in the eastern states, has got even tighter – by a factor of almost 50 percent in most cases (Tasmania by about 25 per cent).

This evidence suggests that the price of potatoes has been reasonably stable. One further statistic was calculated; the average price per kilogram for all states (except Tasmania), from July 2003 to June 2004. This calculation yielded an average price of $1.78 per kilogram.

At the time of writing, a 2 kilogram package of Snow White Potatoes (washed Coliban) was purchased by the consultants from a Brisbane metropolitan IGA for $2.99 ($1.50 per kilogram). At the same location, brushed potatoes were available at $1.00 and $1.50 per kilogram.

These data indicate that the mass merchants are receiving between $1,000 to $1,800 per tonne – not the $2,000 plus figure that has been verbally indicated by many parties.

6.2.2. Retail Segmentation

The number of Mass Merchants (Table 4) and Independent Chain stores (Table 5) are given below.

Table 4: Mass Merchant Store Numbers[22]

Company	No Outlets
Action	81
Aldi	54
Coles	697
Franklins	77
Woolworths	698
Total	1,607

Table 5: Independents Store Numbers[23]

Company	No Outlets
AUR	587
FAL	51
FoodWorks	136
IGA	1,082
Total	1,856

The ABS defines Supermarket and Grocery Stores as "*…units mainly engaged in retailing groceries or non-specialised food lines, whether or not the selling is organised on a self-service basis.*"[24]. This is a very wide definition and is evidenced by the number of outlets (almost 9,500 - Table 6). If we extend the calculations in section 6.2 to include the number of stores we get something like:

- 1,607 Mass Merchant Stores at $389 million of the fresh potato market;
  Average annual sales per outlet at $242,090
- 1,856 Independent Stores at $104 million of the fresh potato market;
  Average annual sales per outlet at $55,868
- 6,013 other Supermarket and Grocery plus 3,650 Fruit and vegetable retailing stores at $72 million of the fresh potato market.
  Average annual sales per outlet at $7,479

Each of these market segments are served by different supply chains. The Mass Merchants have forced efficiency into their supply chains. Over the past ten years they have ceased to buy from the market floor and have developed relationships with key suppliers.

[22] Retail World's Australasian Grocery Guide 2004, 14 edn.
[23] Retail World's Australasian Grocery Guide 2004, 14 edn.
[24] Australian and New Zealand Standard Industrial Classification (ANZSIC). Chapter 3. The detailed classification. Division G Retail Trade 511. Supermarket and Grocery Stores, 1993

The large independents are following a similar route; the experience in Western Australia is a good example; the unique market situation is a contributing factor.

Table 6: Food Retailing, By Sector - 1991-92[25]

Sector	No Retail Locations	Proportion of total food retailing
Supermarkets and grocery stores	9,476	14.4%
Fresh meat, fish and poultry retailing	7,337	11.2%
Fruit and vegetable retailing	3,650	5.6%
Bread and cake retailing	4,755	7.2%
Takeaway food retailing	20,334	30.9%
Specialised food retailing n.e.c.	5,773	8.8%
Cafes and restaurants	14,409	21.9%
Total food retailing	65,734	100.0%

The smallest sector of the market, other Supermarket and Grocery and Fruit and Vegetable retailing are most likely to be truly independent businesses and to purchase from the market floor. It is in this sector of the market that the wholesale merchant plays a significant role – that of aggregation of supply and demand. Typically, the merchant will purchase (or act as an agent) for few and sell too many.

[25] Source: ABS Retailing in [State/Territory], 1991-92 (8623.1-8623.8).

6.3. Effectiveness and Efficiency

During the consultation phase of this study, the major suppliers of fresh potatoes to the Mass Merchants made it abundantly clear that failure to supply is, simply, not an option.

Unfortunately, there is no publicly available quantitative data to support this claim. Anecdotally, a stock-out of potatoes at a mass merchant, independent or a green grocer is extremely rare. Given the "staple" status of potatoes, this is hardly surprising. From this, it is reasonably safe to assume that supply chains for fresh potatoes are effective. That is not to say that these chains are "optimised", this is clearly not the case and is evidenced by the significant supply chain projects underway at Woolworths (Project Refresh[26]) and Coles (Transforming the supply chain[27]).

6.3.1. Capturing the value-add

In general terms, when an organisation creates value the tendency is not to share it, but to try an appropriate as much as possible for its own use. Typically, the value created will be used to bolster profits or to increase market share.

In a multi-echeloned supply chain that has many competitors at each level, the tendency is for value to migrate toward the end user. The organisation that is closest to the end user is in the best position to appropriate most of the value, regardless of which organisation created it.

An excellent example of this behaviour was the introduction of 45ft trailer to Australian road transport. Prior to that time, a standard 40ft trailer had a capacity of 20 pallets. When regulations where introduced to extend trailers to 45ft, transport companies found that they ended up carrying an additional 2 pallets for little or no extra revenue. When B-doubles where introduced, it became possible to carry 34 pallets per load, an increase of 55%. Transport company revenues did not increase at the same rate. In fact, almost the opposite happened, the extra productivity saw

[26] Woolworths Limited Annual Report 2004, p 22.
[27] Coles Myer Limited Annual Report 2004, pp 22-23.

prices to transport customers drop. The savings were passed up the supply chain (or be extracted from), in order to maintain or grow market share.

In simple terms, the organisation that "owns" the end-user makes the rules and appropriates most of the value created. In a competitive environment, they, in turn, are forced to pass on the savings to the end user.

Therefore, if supply chains become more efficient, it is highly unlikely that growers will appropriate any of the value.

6.3.2. Creating Value

The role of the wholesale merchant should not be underestimated. While the supply chains outlined in Figure 6 and Figure 7 suggest logistical inefficiency, the fact remains that it is the merchant that has the relationship with the buyers, not the grower.

To remove this inefficiency it would be necessary to create some centralised selling system (similar to what exists in WA, maybe). This may be very difficult to achieve politically and, even if successful, it is unlikely that the savings will accrue to the grower.

Growers can choose to deal with a single merchant or with multiple merchants. The decision on which alternative to take, will be different for each grower and depend on their willingness to carry out the required tasks, or pay one merchant to act as a "merchants merchant".

6.3.3. Supply and Demand

As with any commodity, potatoes are subject to the laws of supply and demand. When supply outstrips demand, growers will receive relatively less, regardless of the quality of the product. Conversely, when demand outstrips supply growers will receive relatively more, again, regardless of quality. During the course of this study, o grower reported that the best price he has ever received was for poor quality product in a time of scarcity. Notwithstanding, the relative terms "more" and "less" do not compare to the prices that growers received at the farm-gate ten years ago.

In the mid 1990's growers were receiving upwards of $1,000 per tonne, in 2005 this figure is closer to $400 per tonne.

6.3.4. Utility

All products possess value or to use an economic term, utility. It is utility that a customer pays for; it is utility that adds value.

There are four types of economic utility:[28]

- Form;
  A motor vehicle is the sum of its parts. A person might buy the individual parts and assemble a vehicle. Alternatively, a finished vehicle can be purchased. The form – a vehicle, normally has more value to an individual than the form – a collection of parts.
- Time;
  Providing a product (or service) precisely when a customer requires it may create value that a customer will pay a premium to gain.
- Place;
  Providing a product (or service) precisely where a customer requires it may create value that a customer will pay a premium to gain.
- Possession;
  Allowing a customer to take ownership (not necessarily legal title) of a product, on credit, can create significant value.

Potatoes are a commodity. There is very little "form" utility, as is the case with virtually all commodities. The supply chain, in total, creates "time" and "place" utility. Marketing strategy (company policy) and the supply chain create "possession" utility; this creates significant value for retailers. The mass merchants, in particular, have turned possession into an art form, as the following example demonstrates.

In their annual report for 2004, Woolworths Limited made the following statements:

> *"Working capital continues to improve with negative working capital increasing 34% (or $294 million) from $879 million last year to $1,173 million"*[29]

and

[28] Stock, J.R. & Lambert, D.M. 2001, Strategic Logistics Management, 4th edn, McGraw-Hill Irwin, Boston.
[29] Woolworths Limited Annual Report 2004, p 26.

"Funds employed down marginally, while sales up 6.7%, underpinned by a 2.0 day reduction in inventory days to 32.1 days"[30]

Woolworths Limited has a reasonable reputation for paying promptly (but they do like a discount). On average, they pay suppliers at 45 days. Woolworths create negative working capital by selling products and being paid immediately, but not paying their suppliers until quite a bit after the sale has taken place. If they pay, on average, in 45 days, and they have 32 days of inventory, essentially, they have the supplier's money, for 13 days. The amount, $1,173 million divided by 13, equates to $90 million per day. So, for every day that Woolworths can shorten their supply chain, they add $90 million to working capital.

The interest on $90 million for one year at 5% is $4.5 million before tax (EBIT - Earnings before Interest and Tax). Their current EBIT is stated at $1,065 million on sales revenues of $27,934 million, or 3.8%. To make an additional $4.5 million in EBIT from sales would require additional sales in excess of $118 million! The mass merchants are acutely aware of the value of possession, hence their keen interest in improving supply chain efficiencies.

[30] Woolworths Limited Annual Report 2004, p 2.

7. Global Trends

There are three significant echelons in the identified supply chains; growers, merchants and retailers. At each level, in developed western economies, the trend is toward consolidation. Each echelon is covered in the following sections of this report.

7.1. Retail

There is very little consolidation left in the Australian retail market. As noted in section 6.1, the mass merchants already control the vast majority of the market. Overseas trends are towards continuing consolidation. Thirty grocery retailers account for 10% of global food retail sales.[31] Coles Myer and Woolworths do not make the top thirty. Aldi is number twelve in the list at US$29.05 billion – larger than Coles and Woolworths combined business in Australia.

Table 7: Top 5 Global Retailers[32]

Rank	Name	Nationality	Revenue US$ Billions	% Grocery Sales
1	Walmart	U.SA.	$217.79	40%
2	Carrefour/Promodès	France	$62.29	71%
3	Ahold	Holland	$59.70	92%
4	Kroger	U.S.	$50.10	91%
5	Metro AG	Switzerland /Germany	$44.37	50%

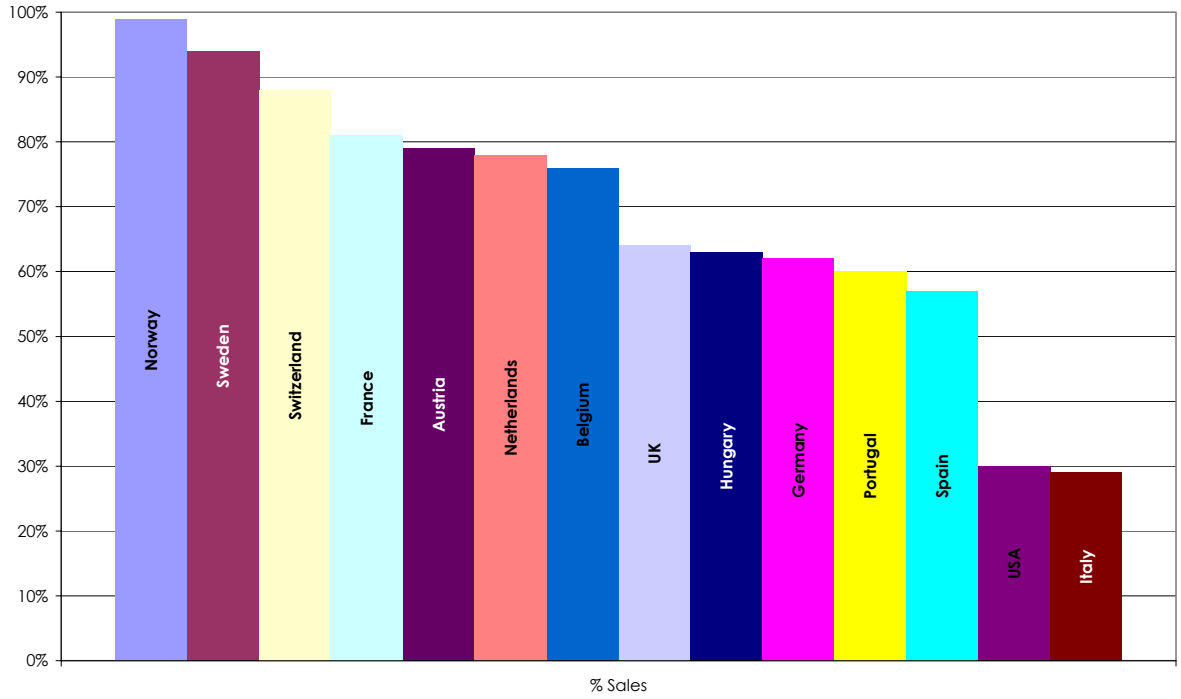
The graph in Figure 9 shows the market share of the top five retail chains in selected western countries and their percentage of sales. Of the 14 countries listed, all but two (Italy and the USA) demonstrate 5 or less players dominating over 50% of the respective markets, with 7 countries having 5 or less players dominating over 70% of the market.

In 1994 the 10 largest food retailers in the US controlled 27% of the market. By 2000 they controlled 50% of the market[33]

[31] Source: The Food Institute Report, June 17, 2002
[32] Source: The Food Institute Report, June 17, 2002

"Ahold's chairman predicts that 5 to 8 supermarket leaders will survive globally. The pre-qualified chains are Wal–Mart, Carrefour-Promodes, Ahold and Metro. Among traditional U.S. retailers none is even in the race. i.e., global sales ranking does not mean you are a global player."[34]

Figure 9: Market Share of the Top 5 Retail Chains[35]



There is also an emergence of global sourcing already occurring in FMCG. Ahold has carried out global promotions for mangoes using shippers in one country, as a source for stores all around the world.[36]

7.1.1. Value Add

"Fresh-cut (minimally processed) fruit and vegetable sales have grown to approximately $12 billion per year in the North American foodservice and retail

[33] Marketing Implications of Retail Food Industry Consolidation, Bill Drake, Distance Education Program, Food Industry Management, Cornell University, September 2001
[34] Cook, Roberta, "Globalization of Food Retailing Presents Challenges and Opportunities to Ag Suppliers," Science Based Information in Support of Sustainable Agriculture and Organic Production Conference, University California Davis Campus, May 1, 2003
[35] See note 25.
[36] See note 25.

market and account for nearly 15% of all produce sales. Fresh-cut products offer produce growers/shippers an opportunity to increase sales by adding value to raw agricultural commodities and offering consumers ready-to-eat produce that is convenient, nutritious and good tasting"[37]

To put this in perspective, Chain Store Age ranked Coles Myer sales at US$17.5 million and Woolworths Limited at US$17 million in 2004,[38] only slightly larger than the US fresh-cut sector.

It is now abundantly clear that there are significant opportunities in value-add for fresh produce. During the course of the study the consultants noted a pre-packed 350g serving of fresh potatoes (Mrs Crocket's brand, packaged with a little butter and herbs) at a Woolworths store, retailing at $4.50; this equates to almost $13,000 per tonne. Mrs Crockets has also introduced a 300g blend of mashed potato with cream and butter, alongside traditional potato salads

7.1.2. Common Trade Practices

Traditionally, there are a range of common trade practices that producers of FMCG have had to factor into the cost of doing business with mass merchants. These include, but are not limited to the following:

- Slotting Fees;
  A fee required by mass merchants to allocate shelf space.
- Volume Rebates;
  Discounts required as sales volumes increase.
- Promotional Fees;
  Fees charged by mass merchants for advertising suppliers products.
- E-commerce fees;
  Fees charged for software that enables electronic communication with the mass merchant's information systems, etc.
- Private Labels;
  Request to produce "generic" products – usually at a lower cost to branded product.
- Returnable Containers;
  Charges (similar to pallet rental fees)

[37] Gorny, J.R. 2005. Leveraging Innovative Fresh-Cut Technologies For Competitive Advantage. Acta Hort. (ISHS) 687:141-148 at http://www.actahort.org/books/687/687_16.htm
[38] Top 100 Global Retailers Chain Store Age December 2004 pp 73-78 available at www.chainstoreage.com

- Payment Discount
  Discounts (as high as 8.5% for early payment)[39]

To date, these have not been common practice for fresh produce in Australia, however during the course of this study, a major supplier to the mass merchants indicated that they do pay Promotional Fees, In store Promotion Fees, produce for Private Label and give payment discounts.

The mass merchants are introducing returnable containers for fresh produce suppliers. Currently, the supplier pays a rental fee only for the time that the container is in their possession; when it is delivered to the mass merchant, it is transferred to their account.

Many years ago in Australia, this was also the practice with pallets. However, all the mass merchants and many transport organisations now include a delayed transfer of pallets to their accounts. This delay typically ranges between 30 and 60 days[40] and pushes the cost of pallet rental back to the supplier. It is likely that the mass merchants will, sometime in the not to distant future, adopt a similar policy for returnable produce containers.

7.1.3. Transnational Procurement

It is becoming abundantly clear that multi-national retail organisations are moving towards transnational sourcing.

There are many examples such as that given in section 7.3 that indicates Carrefour's practice of sourcing melons for 21 countries from three growers in northern Brazil. In 2003, Cook noted:[41]

> *"The existence of global retailers has not yet meant true global sourcing (joint ordering of stores belonging to the same chain). This is changing—especially for key products with more consolidated supply. Expect moves in bananas, citrus and melons by Ahold, maybe Carrefour-Promodes and others. Ahold has*

[39] What to do when the big kids won't play with you, Australian Financial Review Factoring and discounting special report 29 September 2005.
[40] Loscam Limited, Hire Equipment Reference Manual (www.loscam.com.au/formsandmanuals/herm.pdf)
[41] See note 34

already done global promotions for mangoes and some other items, using shippers in one country as a source for all of its stores around the world."

However, in 2001 Thompson had stated that major UK retailer Sainsbury was changing strategy:

"To secure long-term supplies of guaranteed non-GM food ingredients. A process which is involving visits to a number of countries, such as Brazil, which could produce sufficient quantities of non-GM foods."[42] and *"To support the development of an international 'consortium' for sourcing non-GM foods that could provide more significant buying power from the aggregate demand, and sustainable supplies of appropriately priced produce."*[43]

It is very easy to be distracted by the "GM" issue in these statements; the crux of the matter is, however, global sourcing.

If more proof where actually needed, International Produce was formed in 2004. This business was a merger of the Geest's English Village Salads and Thames Fruit Ltd. These businesses are exclusively dedicated to ASDA, now the UK's second largest supermarket, which was purchased by Wal-Mart in 2000. International Produces' purpose is "to work with the best grower organisations in the world, and manage the industry's most efficient supply chain for ASDA."[44]

Over the next two years they plan to expand so their:

"… product portfolio will include, citrus, melons, grapes, stonefruit, salads and top fruit. This will be achieved by sourcing significant volumes of produce from existing and new grower organisations in over 40 countries, worldwide."[45]

Australian potato growers are receiving a very clear message; international sourcing will happen, the only uncertainty is when.

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[42] Thompson, Glen (Global Linkages Pty Ltd), Supply Chain Management: Building partnerships and alliances in international food and agribusiness. A report for the Rural Industries Research and Development Corporation, April 2001
[43] See note 42
[44] http://www.internationalproduce.com/int_about_p.php
[45] See note 44

7.2. WHOLESALE

Worldwide there is an increasing trend towards producers dealing directly with mass merchants. Given the concentration of retail market power, this trend is particularly evident in Australia. While much of Australia's fresh produce is still traded through organisations that have representation on wholesale markets, much of the product does not physically pass through the facilities; it goes from grower to packer to mass merchant distribution centre.

The origins of this trend in Australia are reflected in overseas markets. The following was noted in 2000.

> *"Most produce today still moves from grower-shippers through merchant wholesalers to retail outlets (food stores and foodservice establishments). But, between 1987 and 1997, the share of produce moving through merchant wholesalers, including wholesale produce markets, declined while the share of shipments to large self-distributing grocery retailers increased. Merchant wholesalers have survived by becoming larger, performing more functions and consumer services, and handling a larger array of specialty produce items."*[46]

In Brazil in 1999 it was noted that

> *"The traditional distribution system of imported foods by which specialty importers, wholesalers, trading companies and brokers played a major role is breaking up rapidly. Today food manufacturers, supermarkets, and large food retailers are also buying directly from foreign suppliers".*[47]

As far back as 1991, Tracey-White noted:

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[46] Understanding the Dynamics of Produce Markets: Consumption and Consolidation Grow. By Phil R. Kaufman, Charles R. Handy, Edward W. McLaughlin, Kristen Park, and Geoffrey M. Green, Food and Rural Economics Division, Economic Research Service, U.S. Department of Agriculture. Agriculture Information Bulletin No. 758. August 2000.

[47] The Brazilian Market For Horticultural Products. Horticultural and Tropical Products Division, Foreign Agricultural Service,August 1, 1999. (http://www.fas.usda.gov/htp/marketing/Marketing/brazil.htm)

> *"A recent trend in Western Europe and the USA is to by-pass the wholesale market system. Direct links are created between producers and supermarket chains, usually by means of contract farming arrangements."*[48]

We believe that the consolidation trend at the wholesale level will continue. There is also evidence of growers now performing packer-merchant functions, analogous to a category management in FMCG, such as Mondello Farms Pty Ltd and Zerella Holdings Pty Ltd. While traditional merchants, the Moraitis Group, are backward integrating into growing, to secure supply.

[48] Wholesale markets: Planning and design manual. J. D. Tracey-White Food and Agriculture Organization of the United Nations, Viale delle Terme di Caracalla, 00100 Rome. 1991 (http://www.fao.org/docrep/T0521E/T0521E00.htm)

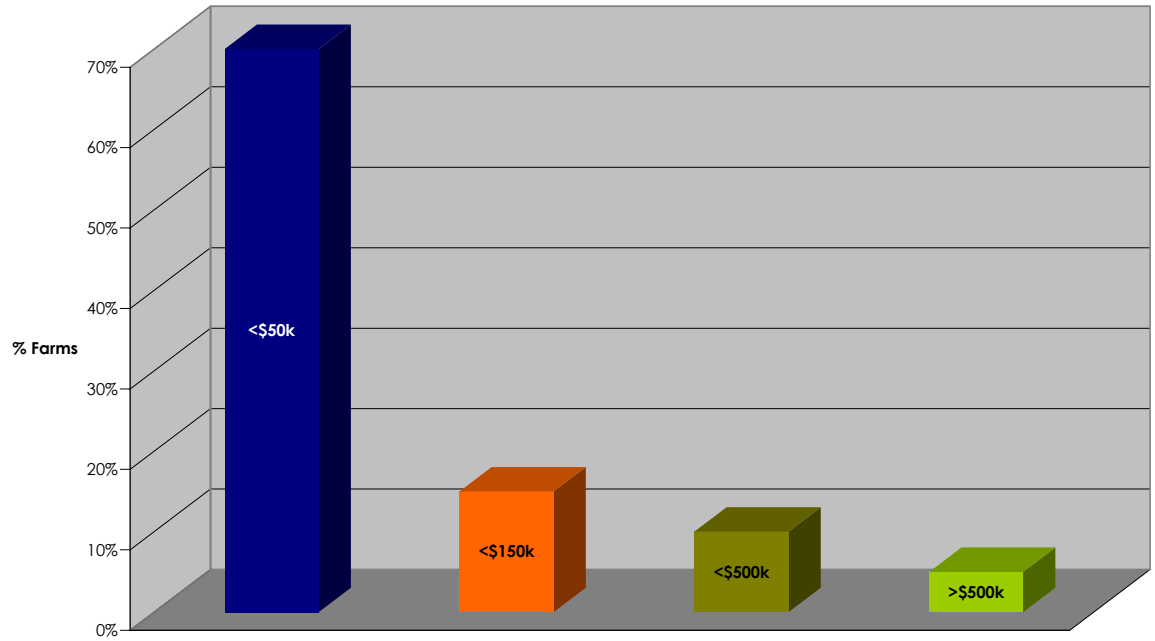
7.3. GROWERS

Again, in most western democracies, there is a strong trend toward consolidation in the grower echelon.

> *"Carrefour, the world's largest supermarket chain, has set up its own, huge distribution centre in São Paulo, Brazil, serving a market of more than 50 million consumers. Carrefour buys melons from just three growers in northeast Brazil to supply all its Brazilian stores and to ship to distribution centres in 21 countries."*[49]

In the USA, farming has become corporatised (see Figure 10). According to Jackson only 20% of US farms are generating a profit in any given year[50]. Figure 10 illustrates a familiar Pareto effect, 5% of farms generate receipts in excess of US$500,000 per annum while the vast majority generate receipts less than US$50,000.

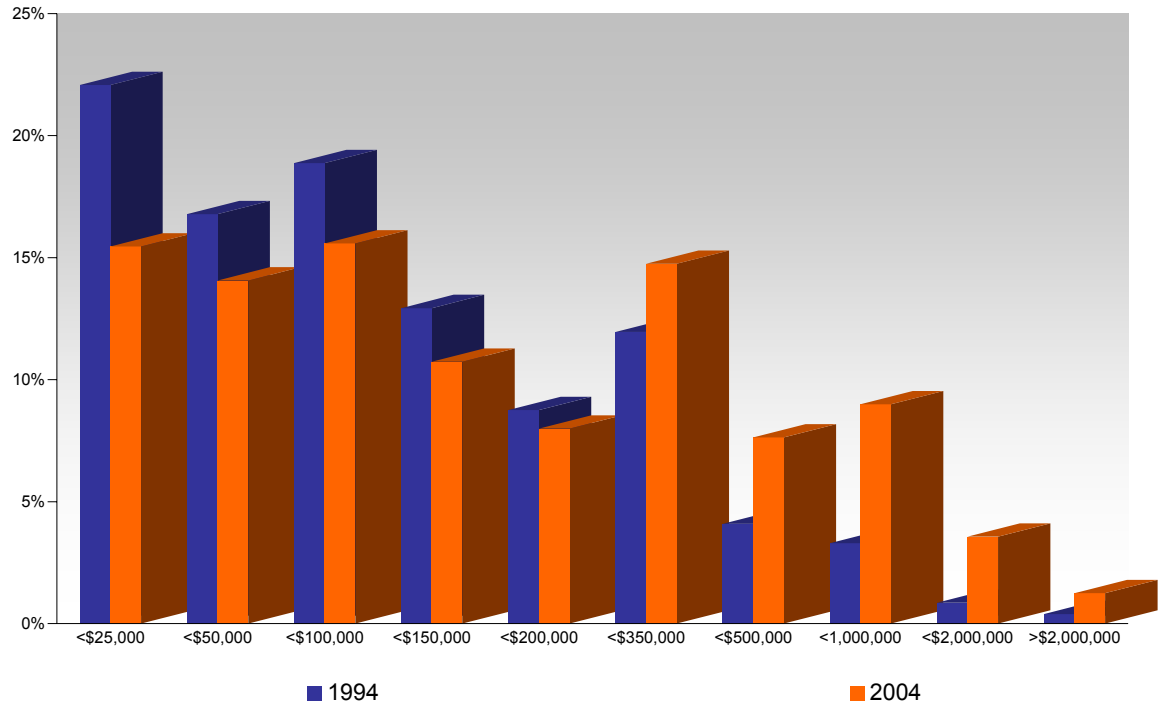
Figure 10: US Farm Receipts[51]



[49] The State of Food Insecurity in the World 2004 - monitoring progress towards the World Food Summit and Millennium Development Goals. Food and Agriculture Organization of the United Nations Viale delle Terme di Caracalla, 00100 Rome,, Italy.

The ABS estimates that the number of establishments in Australia with an estimated value of agricultural operations of $5,000 or more (farms with over $5,000 in income) has dropped by 13% in the ten years to 2004; the number of farms involved in vegetable growing has reduced by 14.5% [52].

Figure 11: Number of establishments engaged in agricultural activity[53]



In the same period, the number of farms with operations valued over $1 million has tripled, while those valued at less than $100,000 have decreased by one-third. This is perhaps, the strongest evidence to support consolidation in the grower echelon of the supply chain.

[50] Success Strategies for Tomorrow's Agriculture - National Crop Insurance Services, Annual Meeting, Indian Wells, CA, February 17, 2004. Presented by Mike Jackson, Agri Business Group, Inc
[51] See note 50
[52] Australian Farming in Brief 2005, ABS Catalogue No. 7106.0
[53] see note 52