The Australian Apple Industry:

Can the family-owned farm survive?

A report for

by Fiona Hall

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Executive Summary

The Australian apple industry is at a cross roads; production is increasing, consumption is declining, growers' margins are decreasing and export opportunities are scarce.

This study of the apple industry in New Zealand, Washington (USA) and South Tyrol (Italy) shows that there is much that the Australian apple industry can do to improve its position.

Consolidation and specialisation of farms have been spectacularly successful in New Zealand, with apple growers there now being regarded as members of a new 'millionaire's club'. The author sees that it is time for Australian farms also to consolidate and specialise, and considers four possible ways to adapt.

The cooperative system of South Tyrol is seen as a key part of the success of apple farming in that region, yet the demise of the formal cooperative in Washington showed that cooperatives are clearly not a silver bullet. While cooperatives are not seen as a solution for Australia, the author believes that the Australian apple industry would only gain if orchardists worked together and supported each other in a more cooperative manner.

The benefits of continual renewal and succession planning were highlighted by the New Zealand case study, where annual self-assessment and long-term strategic planning have become embedded in the culture of the business. The author believes that similar continual renewal and succession planning are also essential for the Australian apple industry.

The importance of marketing for success of the fruit industry was shown in all three case-studies. With the Australian fruit market generally restricted to domestic supermarkets and their stranglehold on the distribution of the fresh produce dollar, it is essential for the Australian apple industry to increase both its advertising budget and its share of the export market. This will take an industry-wide effort and possible government support.

The Australian apple industry is in need of financial investment to develop new varieties, intensify planting systems and build new infrastructure such as modern packhouses. The industry has difficulty attracting investment due to many issues, including lack of data

concerning the industry. Cooperation within the apple industry to enable the collection of high quality data to attract investment is seen as essential.

With Australian apple farmers facing diminishing farm-gate returns, this report offers hope for a bright future. However, urgent action is needed.

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Foreword

My husband, Bernard and I are partners with Bernard's brother, Tim, in an apple producing company, Bonny Glen Fruits Pty Ltd. Bernard and Tim's parents moved from Sydney to Orange in 1973 to find a better way of life for their young family of six children. Fred and Pam looked at cattle farms but they settled on a 20-acre apple orchard. Since this time, the eldest and youngest sons continued in the business and over the years they purchased three more orchards (growing 150,000 apple trees), two cool-stores and a pack-house. Recent succession planning has resulted in Bernard and Tim becoming equal shareholders in the Bonny Glen Fruits Pty Ltd, with Fred and Pam retiring.

Bernard and I married in 1997 and whilst I worked with other organisations I could see that the business required more resources in administration, marketing and sales. I became involved with the business and simultaneously created another business – to pack, market and export fresh cherries for Bonny Glen Fruits and other growers in districts around NSW.

Raised on a cattle farm, I knew very little of intensive horticulture and since deciding to become involved in the business, I have immersed myself to learn as much as possible about the industry. I would like to see it grow, be successful and become an industry that my children would be proud of and be willing to be involved with themselves as they come of age.

The Nuffield Farming Scholarship has given me the unique opportunity to do just this; to learn more about the apple industry and what has been successful around the world. My mind has been opened to the world of agriculture, by having the chance to travel with brilliant farmers to India, Turkey, France, USA, Singapore, Italy, UK, Ireland and the Netherlands. I have witnessed a whole range of farming practices, from subsistence farming to global-scale agricultural farming enterprises. I have met a variety of people in politics, corporation and farming, as well as other Nuffield scholars whom I would not have met had I not been awarded this scholarship.

Horticulture Innovation Australia has included a Leadership and People Development Fund (building capacity) as one of the 5 strategic co-investment funds for investing for the Future for Australian Horticulture. I applaud HIAL and APAL for their foresight in investing in capacity-

building and for including the Nuffield Farming Scholarship as one of these projects. I am extremely fortunate that I have had the opportunity to participate in this project.

Acknowledgments

First and foremost, I would like to thank my wonderful husband, Bernard, for not only accepting my decision to apply for the Nuffield Scholarship, but for actively encouraging me to do so.

I would also like to thank:

- My young children, who had to go for weeks on end without their mother, but were happy for Mum to go and do her 'NuffNuff'.
- My extended family for their encouragement and support with helping to look after the children.
- My work colleagues: Margot who kept the ship afloat and Kirsty who spent many hours assisting me with my itineraries.
- My GFP travel friends: Dan Steele, Abby McKibben, Matthew McVeigh, Nathan Free, James Terry and Cecilia Fialho. This was a trip that will never be repeated in my life-time and the inspiration, encouragement and friendships developed from this group are lifelong.
- My travel friend Lucy Pearce, who at the last moment decided to join me on the European leg of my private study.
- In New Zealand:
    - James Terry, with whom I travelled and spent many hours discussing issues, topics and opportunities.
    - Ross Wilson and Jonathan Brooks from Agfirst and orchardists John and Wendy Flowers.

Finally, I would like to thank my investors, APAL and HIAL for their significant financial contribution, which made this wonderful experience possible.

Abbreviations

ABS - Australian Bureau of Statistics

APAL - Apple and Pear Australia Ltd

EU - European Union

FOB - Freight on Board

GFP - Global Focus Program

HIAL- Horticulture Innovation Australia Ltd

LINSA - Learning and Innovation Network for Sustainable Agriculture

NZ - New Zealand

RSE - Recognised Seasonal Employees Program

USA - United States of America

VIP - Val Venosta Cooperatives Association

VOG - Association of South Tyrolean Fruit Growers' Cooperative

WAPA - World Apple and Pear Association

Objectives

The overall aim of this study was to identify best practice in the apple industry in other countries and map out how these practices could be used to improve the viability of the Australian apple industry in general and the family-owned apple farm in particular.

The specific objectives of the project were to:

- Establish the current position of the Australian apple industry.
- Identify best practice in the target countries: what works and what does not.
- Identify key learnings from each country.
- Make recommendations to the Australian apple industry in general and to small family-owned farms in particular, to ensure not only that they continue to survive, but to thrive.

To achieve the objectives of this report it was decided to conduct a case study of various aspects of apple growing in each of three countries. Whilst China is by far the largest apple producing country in the world, it was not considered useful for a case study, due to the poor infrastructure, short market season and low returns. It was considered that the most beneficial countries to learn from were other developed countries such as New Zealand, USA and Italy. If time permitted, Poland would also have been useful for a case study, as in recent years it has become a significant global competitor, particularly within the EU. It is also the largest exporter of apples worldwide. Poland may present a future Nuffield Scholarship holder with an opportunity for study.

Chapter 1: Introduction

Understanding the Australian apple industry today

Worldwide, 80 million tonnes of apples are grown annually, with China producing almost half of these (WAPA - World Data Report, 2013). This report also shows that the New Zealand and Australian apple industries combined contribute less than 1% to global production. This puts into perspective Australia's relatively small-player status in a significant world commodity.

Although the Australian apple industry is a small player on a global scale, within Australia it is quite a significant player. For the year 2014-15, the Australian apple industry was valued at nearly $556 million, making it the highest value fruit industry in Australia, larger than citrus ($508M), bananas ($455M) and table grapes ($343M). In addition, the pear industry was valued at around $125 million, making a combined value for the apple/pear industry of $681 million (ABS, 2015).

Despite this high production level, Australia exports a relatively small proportion of its apples and in 2014-15 exported only 2,134 tonnes of apples, less than 1% of total domestic production (ABS, 2015).

While the apple industry is the highest value fruit industry Australia, many in the industry believe the outlook is grim, due to issues of increasing production, declining consumption and small growers' margins.

Production:

Apple production in Australia is increasing and the industry now finds itself reliant on an already oversupplied domestic market. In 2015, production increased to 295,000 tonnes, returning to levels not seen since 2011. The forecast is for this output to continue to increase each year, as growers' plant more productive varieties and intensify their plantings.

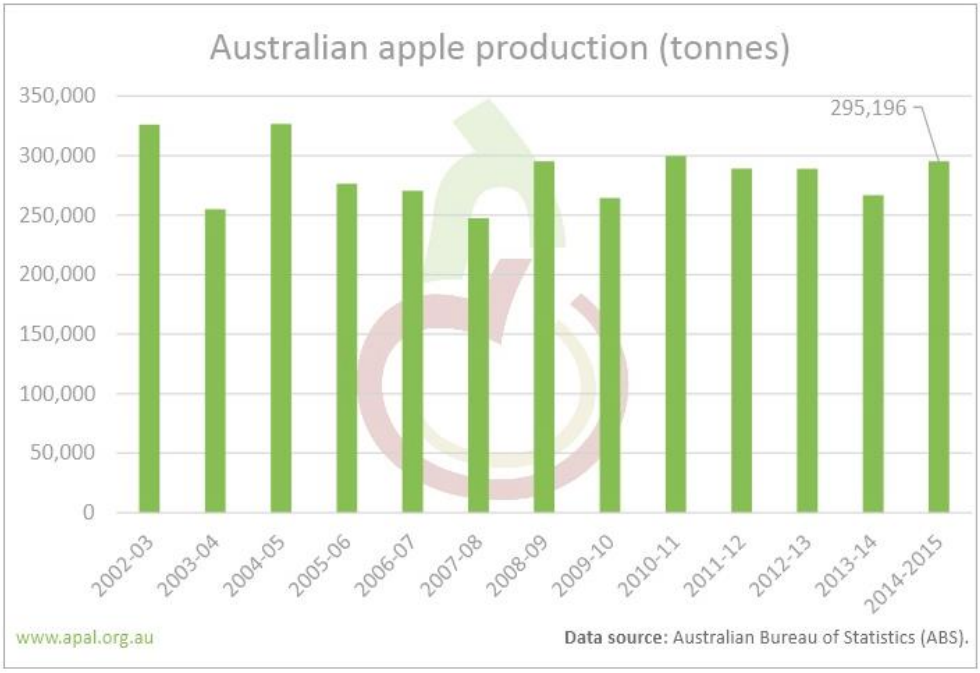

Figure 1: Australian Apple Production, APAL, 2015

Consumption:

Consumption of apples in Australia is declining. In 2014-15, fresh apple consumption was around 8kg per person per year, equating to less than one apple per person per week. Consumption is expected to continue to decline at 3% per annum due to competition from so-called health bars and drinks, which have a much larger marketing budget than the apple industry.

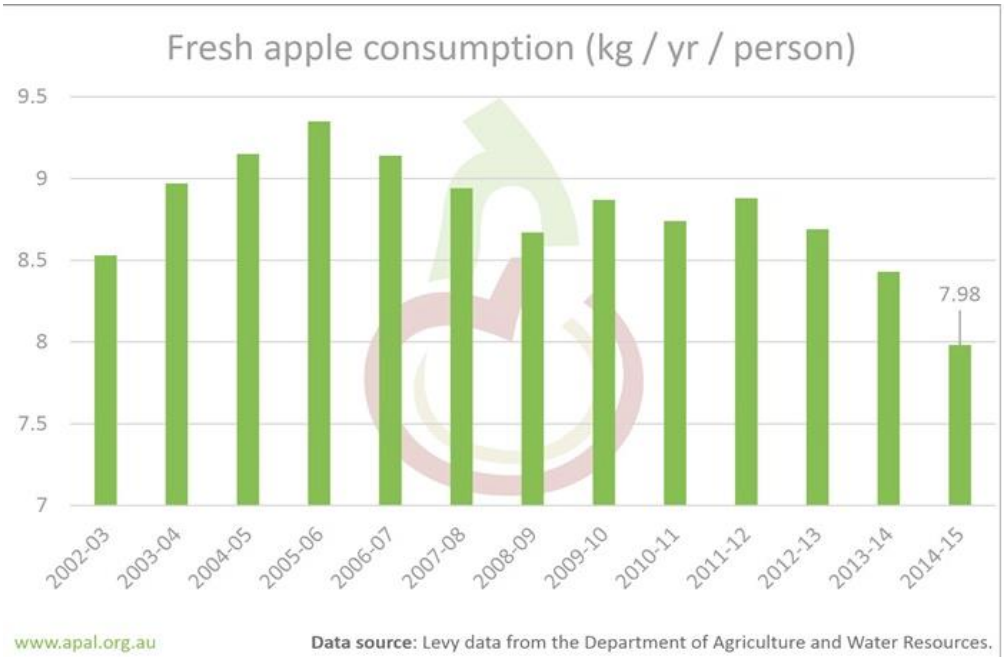

Figure 2: Fresh Apple Consumption (APAL, 2015)

Growers' Margins:

Whilst the Australian apple industry is valued at a billion dollars at retail level, it is only valued at $550 million at the farm gate. Australia is the highest cost producer in the world and therefore finds it difficult to be globally competitive. Growers' margins are continuing to be squeezed, as growers' reliance on the domestic market makes them vulnerable. Currently, supermarket share of the fresh produce dollar is 88% and is increasing; from 2015 to 2016, that margin increased by 19%.

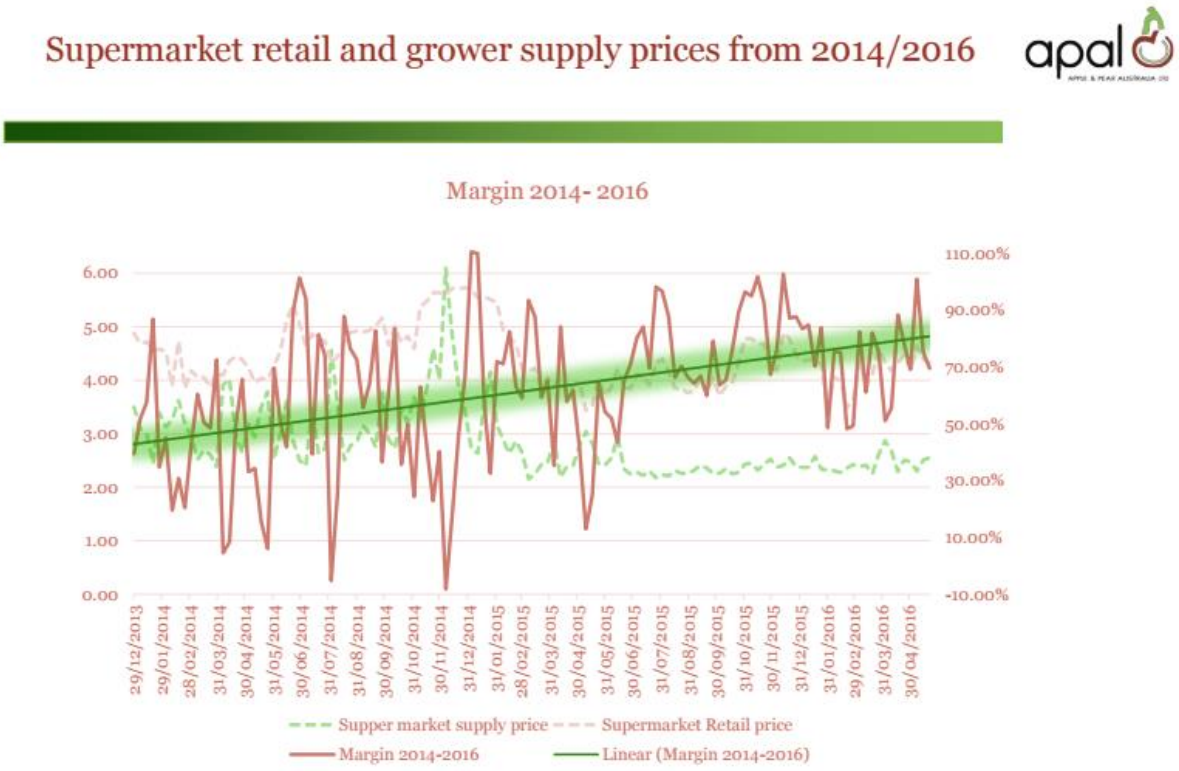

Figure 3: Supermarket Retail and Grower Supply Prices APAL, 2016

Having established the current position of the Australian apple industry, the author now presents case studies from New Zealand, Washington (USA) and South Tyrol (Italy). Industry practices are discussed and key learnings from each country are identified.

Chapter 2: Case study 1- New Zealand

Understanding the New Zealand apple industry

The New Zealand apple industry experienced a long period of growth through the post-war period which led to an increase in plantings, production, productivity and export prices.
Many new entrants entered the industry, seeking the high returns. Consequently, grower numbers doubled within the decade from 1985 to 1995. Typically, in 2005 this trend resulted in NZ apple industry to be described as '*catastrophic and disastrous*' (Jonathan Brooks, Agfirst, NZ).

The factors contributing to this crisis were:

- Declining consumption in their key markets (UK, USA, Germany and EU).
- Global overproduction (particularly in China which tripled its production in this time).
- Erosion of their competitive strength (after being declared the most competitive apple supplier in the world in 1995), as Chile and South Africa improved their own methods and productivity.
- Varieties became commodities (eg. Gala and Braeburn were embraced by the world) and the new varieties were yet to deliver.
- Slow transitioning of new industry structures.

Prices fell dramatically and the farm-gate costs were higher than the apple returns. Prices fluctuated widely for 20 years and an all-time price low was experienced in 1997. Many growers and packers exited the industry, with grower numbers halving in 12 months.

When industry hit an all-time rock bottom, it was forced to reshape and re-invent itself. Growers had to either adapt or get out. At first the industry tried to cut costs, then lost focus and tried to compete against Chile. The market was deregulated and a mass of marketers entered the industry, all driving down the international price, resulting in further devastation and exiting of the industry, and consolidation continued to occur.

Despite this dire situation, the apple industry in New Zealand was able to turn itself around, becoming the world's top ranked apple producer in 2015 (The World Apple Report 2016).

Specific strategies enabling this ultimate success included:

- Consolidation of NZ growers from 2,000 to 400. Production meantime increased, but they learned to cope with this loss of producers.
- A focus on the industry's strengths, including proximity to the markets, and they capitalised on promoting their great environment in which to grow apples with a clean green image.
- Investment in personal development for growers to learn how to become more productive.
- An industry focus on Asia, with varieties purpose-grown for an Asian palate.

> *"The New Zealand apple industry today is a thriving industry; the growers are known as the new 'millionaire club' of New Zealand"*
> (Ross Wilson, Agfirst, 2013).

These changes have resulted in a thriving apple industry. It has consolidated, collaborated and innovated, with the result that productivity has increased, with the average grower now producing 100 tonne per hectare. Deciduous fruit plantings are now estimated at 9,626 hectares (David Lee-Jones, GAIN report, 2015) and production for 2015/2016 is forecast at 561,100 metric tonnes with a value of $700 million and a goal to be a billion-dollar industry by 2022.

Today, growers are experiencing the best years ever, which is not just due to orchard systems, but the supporting supply and marketing infrastructure and the broader economic and political environment in which it operates (Allan Pollard, CEO, Pip Fruit, Jan 2015). A focus on new exclusive varieties that earn a substantial price premium in many international markets has also been a contributing factor to today's success.

A significant proportion of the total apple area in New Zealand is owned or leased by the integrated fruit companies that grow, pack, store and export. Following is a study of the RJ Flowers fruit company that grows for one of these integrated companies. This company was selected for a case study as it is a successful, family-owned farm within the thriving New Zealand apple and pear industry.

Case Study – RJ Flowers

Figure 4: Ron Flowers and John Evans at RJ Flowers' orchards

Background

RJ Flowers Ltd is located in Twyford, Hawkes Bay, New Zealand. Originally started by Ron Flowers in 1968, it is now owned and operated by three generations: Ron, his daughter Wendy and her husband John Evans, and Wendy and John's daughter, Jan Evans. The business grows kiwifruit, pears and apples, producing 300,000 tonnes of Jazz™ and Envy™ apples per annum. RJ Flowers owns 70 ha and employs 25 permanent and 10 casual staff, with up to 75 in peak season.

Ron's original intention in starting RJ Flowers Ltd in 1968, was to grow onions on the quarter acre of land he had leased at the time, for £1 ($2). It was a difficult time as he had no financial backing or capital, but his hard work and determination to succeed paid off when he was later able to purchase 70 ha of highly fertile Twyford soil.

Ron was soon approached by Turners and Growers, to supply onions for export to Japan. Initially, Ron could only supply a few tonnes of onions, but this has since become a long-term business relationship, with Turners & Growers now handling the majority of RJ Flowers' produce.

John and Wendy, brought together by their common love of horticulture, worked with Ron to help grow the business by focusing solely on growing fruit: pears, kiwifruit and apples, predominantly Jazz™ and Envy™. The Jazz™ and Envy™ both yield 100 tonne per ha packed. Sale of a beach house provided capital for John to buy his parents' properties at market prices

in 2005 and later to purchase a neighbouring property in 2006 and another in 2013. This provided much needed land for expansion of the business.

Fruit Sales Model

Like other growers, RJ Flowers needed to consider what would work best for their business and which products would give the best returns. Ten years ago, they came to a crossroad and had to decide whether to become vertically integrated or become professional growers, concentrating solely on growing. They had one of the last privately owned packing sheds in the country before deciding to close it down and to limit their products to pears, Jazz™ and Envy™ apples and kiwifruit. They decided to become professional growers and market all their produce through corporate owned pack-houses. Enza markets their pears and apples, while Freshmax markets their kiwi fruit. This decision has proved to be the right one for RJ Flowers, with the managers happy with the model of Enza and the commitment of volume.

Enza was formerly the New Zealand Apple and Pear Marketing Board and the brand was launched in 1992. In 2003, ENZA merged with Turners and Growers. Turners and Growers are recognised as New Zealand's leading distributor, marketer and exporter of premium fresh produce. The group listed on the New Zealand stock exchange in 2004, with BayWa Ag (Munich) becoming a major shareholder of Turners and Growers.

Figure 5: John Evans (orchardist), Fiona Hall (author) and Jonathan Brookes (Agfirst)

A SWOT analysis of RJ Flowers shows that the business has made the most of its opportunities, whilst minimising weaknesses and managing the threats.

WEAKNESSES	**STRENGTHS**
● Urban sprawl and limitation of available land to expand. ● The next generation not sharing the same vision. ● Tendency to micro-manage. ● Other staff members are yet to share the vision. ● Enza engaging downwards. ● Technology changing quickly. ● Consumer trends. ● Cost of capital; money is expensive and requires a 100k per ha return.	● Varietal workshops. ● Leader and vocal at grower meetings. ● Using technology in the orchards. ● Focus on detail. ● Limited to growing only two varieties of apples and three commodities. ● Works towards set goals. ● Bench markets with varietal growers. ● Measure everything they do. ● RSE program for labour that stays onsite. ● Involved in industry groups and networks. ● Understand people, safety, markets, biosecurity. ● Look critically at self every year to make annual improvements. ● Driven. ● Uses outside resources to help achieve goals eg consultants.
THREATS	**OPPORTUNITIES**
● Biosecurity – inbound and outbound. ● Food safety. ● Workplace safety. ● Pests and diseases, particularly fireblight for pears. ● Water allocation and security. ● Losing market access. ● Risk of land degradation through over-intensive farming practices.	● Continuation of cooperation with other growers and lifting the lower performing growers. ● New varieties becoming available. ● Learn from each other and overseas countries. ● Develop the Italian model of passing on land to the next generation. ● Keep pushing the yield achievable limits. ● To better understand apple tree agronomy in order to use less fertiliser and chemicals.

Figure 6: SWOT Analysis - RJ Flowers

JR Flowers' staff development strategy includes professionalising staff members with training, having them obtain formal qualifications and giving them a sense of ownership. The key staff members are continually put through personal growth programs. There is a big financial difference between being average in the game and being excellent in the game.

Their strategy is for small, controlled growth. The focus is to increase profits, not by cutting costs, but by doing things better, which is what the NZ industry as a whole has done so well. The business focuses on small improvements every year, so that now it is the finest details that are being adjusted. However, the difference is huge gains for every percent of improvement in packout and yield. The business continues to replace 5% of the orchard every year.

Key learnings from NZ

- The New Zealand apple industry hit rock bottom before any collaboration from and changes to industry were implemented. Is that where Australia is heading?
- Investment from corporate companies has been a key game changer.
- The case study showed the benefits of relinquishing individual packing infrastructure and becoming a professional grower, concentrating on high yields and low costs.
- Continual renewal and staff development pay long-term dividends.

Chapter 3: Case study 2 - Washington State, USA

Understanding the Washington State apple industry

Apple production in central northern Washington State began in the late 1800's when irrigation water became available. Because of the sparseness of the population, growers began looking beyond the region for markets in which to sell their fruit. By the early 1920's Washington was the leading commercial producer of apples (Thomas Schotzo, Washington State University).

Apple production in Washington has generally been increasing since the mid-1950's but in recent years there has been a removal of 40,000 acres. Washington State has very favourable conditions for the production of apples, which minimises pest and disease pressures and related costs that other growing areas may experience. New varieties and varietal shift have impacted the industry in a positive way, with the industry now focused on breeding programs to find new varieties, particularly those that exhibit disease resistance and that therefore require reduced production costs.

The Washington Apple Commission has played a key role in developing and expanding markets. As a result, the Washington apple is recognised around the world.

Over the next decade, Washington production will stabilise as the industry worldwide adjusts to the new higher levels of production. The mix of varieties will continue to shift to a more uniform distribution across varieties with less emphasis on the Red Delicious, for example (USDA, NASS. Non-citrus Fruits and Nuts, 2005).

The building of the export market for Washington apples has to be viewed as a major success. However, it has to be recognised that this success is due to the ability of the industry to expand the total market by opening more countries to the sale of apples. Since Washington apples can now be exported to nearly every country in the world, further short-run expansion will have to come from tariff reduction. Politics will have an impact on the market access, and the recent announcement from President Trump for the USA to withdraw from the Trans Pacific Partnership is a case in point. The next few years will reveal whether this closes off marketing

avenues for Australia or in fact opens further opportunities, as the countries re-negotiate trade deals.

Apple Marketing System

Figure 7 below shows the flow of product from the orchard to the consumer; in effect the supply chain for apples. Fruit is produced and harvested in the orchard and then delivered to the warehouse for storage and packing.

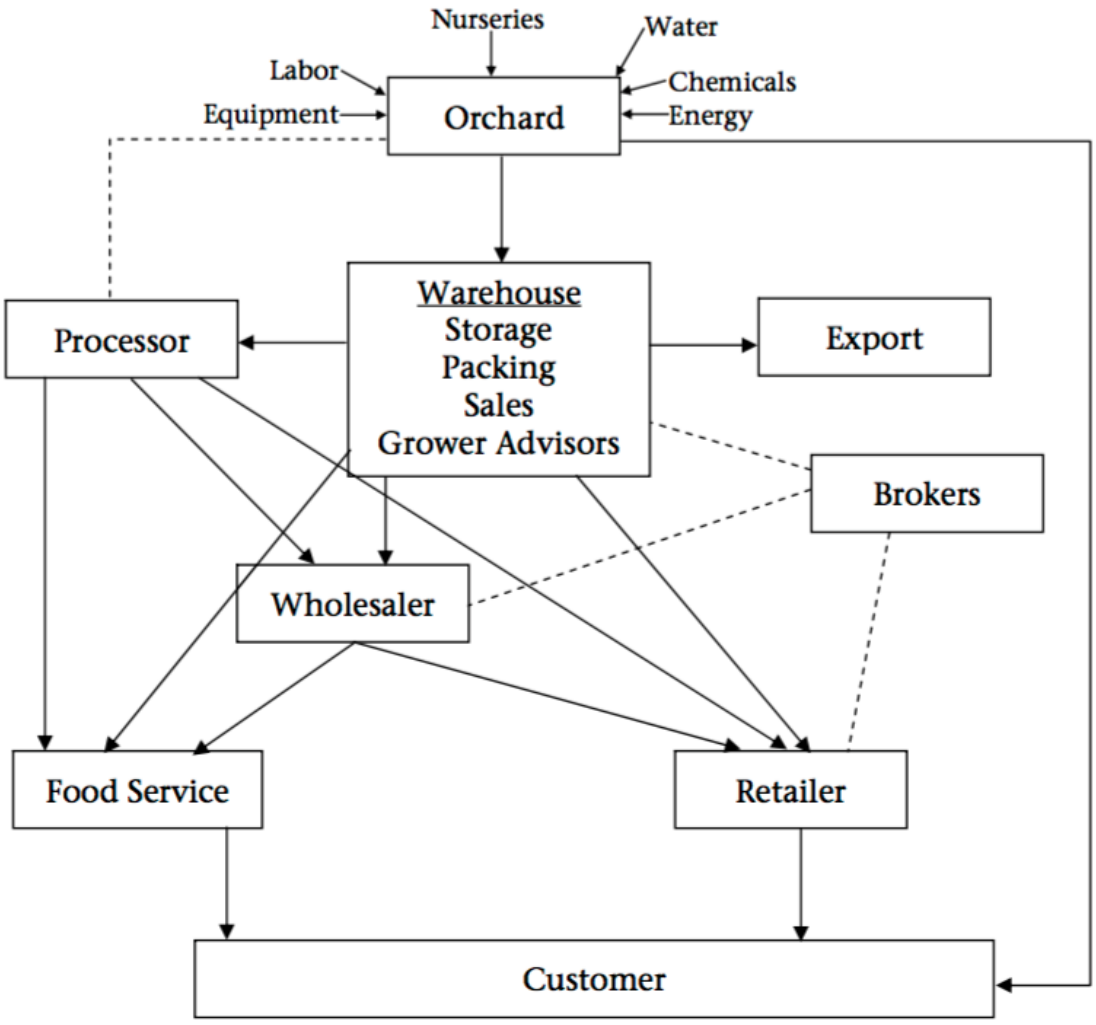

Figure 7: Apple Production and Marketing System, USA

In the Washington apple industry, warehouses sell a set of services to growers. Warehouses do not typically buy the fruit, but merely supply a set of services, including storage, packing, sales and grower advice. The storage category includes both regular-atmosphere and controlled-

atmosphere storage. Packing includes grading, sizing and placing fruit into cartons.

Sales may be handled by warehouse employees or alternatively, by a sales agency. Most sales are made on a FOB basis and usually use Washington grade standards. These grade standards were originally established to facilitate communication between buyers and sellers and cover size, shape, insect and disease damage, bruises and colour. In order to ensure neither seller or buyer could make false claims, a third-party inspection service, the Federal-State inspection service was established to ensure the standard matches with what is stamped on cartons.

Grower-Shipper Interface

Each year the grower signs a contract with a particular warehouse that stipulates that the grower will deliver his/her fruit to the warehouse. In years past, the grower typically delivered all the fruit to a single warehouse.

Today, that is not necessarily the case. Some growers will split their fruit among warehouses according to each warehouse's marketing success with specific varieties. Others will deliver the same variety to more than one warehouse as a way of monitoring each warehouse's ability to pack and market the fruit. A larger grower is more likely to do this. Most growers will contract with the same warehouse year after year, but a number of growers change warehouses every year. Within the industry this 'floating' tonnage is thought to be about 10%. In return, the warehouse commits, in the contract, to handle and sell the grower's fruit in the most efficient manner possible. No mention, let alone guarantee, is made of the actual price to be paid the grower.

It should be noted that the grower retains ownership of the fruit until such time as it is accepted by the final buyer (wholesaler, retailer or food-service purveyor). Warehouses will occasionally buy fruit from growers, but it is not a common practice. The decision to remain with a warehouse is, in fact, a two-way street. Not only are there growers who become sufficiently displeased with returns and/or service of a particular warehouse to change, but warehouses will also become unhappy with growers and refuse to handle fruit from those growers in the future.

Grower dissatisfaction usually revolves around the returns (either prices or charges) or issues about fruit handling. Warehouses do, sometimes, lose track of fruit to the detriment of the

grower. Only the diligent grower who totals up bins delivered will find any such errors. Errors found by the warehouse in the accounting of the fruit delivered may or may not always be reported to the grower.

Warehouse dissatisfaction usually involves fruit quality. Growers' unwillingness to harvest according to warehouse instructions is sometimes sufficient cause for the warehouse to sever relations. The issue of harvest timing is significant. Having an adequate volume available at the start of harvest is important to warehouses with close or contractual relations with buyers. Keeping enough fruit in the system to avoid stock-outs is critical. Harvest timing is also important to the sales strategy of the warehouse. The warehouse wants an adequate volume of fruit in each type.

Case Study – Gold Digger Apples

As the New Zealand case study focused on a single grower, it was decided to focus this second case-study on a cooperative of growers, to give a range of perspectives, in the hope that there would be ideas here for Australia as well. Therefore, the subject chosen for case-study, in Washington USA, was the last grower-owned tree-fruit cooperative in the Okanogan Valley, four miles south of the Canadian border.

Background

The cooperative consists of 44 grower members, 500 acres of orchard and leases an additional 250 acres. In the early days of orcharding, each grower packed, sold and shipped their own fruit directly from their orchard. It did not take long for orchardists to begin pooling together their small amount of fruit in warehouses to ship larger quantities to buyers.

Oroville Fruit Exchange was a privately owned fruit warehouse, where several local orchardists brought their fruit to have it packed and sold. This exchange then grew into a fruit cooperative named Oroville United Growers. The concept of a fruit cooperative is that each grower has the benefits of ownership as well as the security of sharing expenses and workforce with a group of other orchardists.

In 1938, Oroville United Growers needed a label for their fruit and because of the town's gold

mining history, ‘Gold Digger’ was judged an appropriate name.

In 2008, the Gold Digger Apple business model was changed, so that growers no longer sold their own produce, but instead supplied produce to Chelan Fresh Marketing, which then sold-on the fruit on their behalf. Chelan Fresh Marketing is one of the largest marketing companies in the region, selling most of the fruit in central northern Washington.

Gold Digger Apples owns and operates several company orchards with a diverse variety of apples, pears and cherries as well as vineyards with many different wine grapes. Gold Digger’s company orchards are a large contributor to the warehouse, allowing them to pack fruit almost year-round.

The author arranged meetings with several of the grower-members of the cooperative and General Manager Greg Moser and Inventory Manager Chad Smith. Unfortunately, a few weeks prior to the author’s visit to Oroville, Gold Digger Apples filed chapter 7 bankruptcy as a result of the US Bank calling in the cooperative’s $18 million loan. Nevertheless, it was decided to continue with the planned visit to Oroville to gain an understanding of why this old, established cooperative ended up in such a position.

Gold Digger’s General Manager and Inventory Manager were both generous with their information. When meeting a few of the growers, it was apparent that they were quite disillusioned with the cooperative arrangement.

A SWOT analysis of the cooperative indicates why it ended up in liquidation: location and transport costs, perceived conflict of interest in the cooperative, diversification into unfamiliar fields and outdated machinery, technology and varieties. There does not seem to have been adequate capital available from members and this, coupled with a low standard of management by the cooperative, led to the eventual demise of the cooperative.

WEAKNESSES	STRENGTHS
● Location - the most northerly operation in the region ● High cost of transport to shipping facility. ● Co-operative has bought a lot of own orchards, which members view as a conflict of interest. ● Diversified into wine - not what it knows. ● Outdated machinery and technology. ● Have not replanted with new varieties. ● Inability to service the bank loan. ● The board made decisions that growers did not want.	● Established brand name. ● Ideal growing conditions. ● Pooled together grower resources and knowledge. ● Have employed own fieldmen and agronomist to ensure consistency. ● Ample water supplies.
THREATS	**OPPORTUNITIES**
● Threat to the grower is now less control and say over their produce. ● Growers dissatisfied with cooperative management. ● Will there be payment of the last crop by the liquidators to enable them to continue? ● Loss of brand and identity. ● Big co-operatives buying out the family farms. ● Unproductive and unprofitable orchards which are increasingly becoming worse as years go on.	Due to the filed bankruptcy and consequent closure of the site there are no further opportunities for Gold Diggers. ● The opportunities for the growers are to supply Chelan Fresh or Gebbers farms in the region to handle their produce. ● Some farmers are looking to turn orchards to other organic pursuits, rather than bear the costs required to re-establish new orchards and new varieties.

Figure 8: SWOT analysis - Gold Digger Apples

Key Learnings from Washington

- The industry has been slow to respond to consumer preferences and only in recent years has responded to the demand for new varieties. The industry needs to be consumer driven.
- Cooperatives need to focus on returns for their members and not lose focus by diversifying into other enterprises.
- Access to global markets has been the major contributor to the growth and success of the industry.

Chapter 4: Case study 3 - South Tyrol, Italy

Understanding the South Tyrol apple industry

South Tyrol is the most northerly province of Italy and borders Austria and Switzerland. It supplies 50% of the Italian apple market, 15% of Europe and 2% of the global apple market.

Since the end of WWII, the various stakeholders in apple production and marketing have organised themselves into a structure known as LINSA - Learning and Innovative Network for Sustainable Agriculture. This is a sophisticated and adaptive structure that involves producers, their cooperatives and associations, researchers and agriculture advisory services all collaborating in a network.

South Tyrol has been able to develop its production and marketing system to provide livelihoods for 8,000 apple farming families (Australia has less than 600). Apple producers in South Tyrol make the system unique - they are attached to their culture and traditions yet at the same time are true innovators. They have embraced modern storage and marketing mechanisms and are always looking for new ideas to be more efficient and effective. They have adapted new technology and processes, and have established new institutions when and where needed and they have taken risks to change and adapt to new conditions.

Their innovative approach and resourcefulness are the main drivers of the success of the cooperative LINSA. There is a strong belief that the individual flourishes better within the framework of the group; cooperatives combine the wealth and resources of many individuals and harness them in a united way.

In order to survive and adapt, the south Tyrolean society required ongoing cooperation rather than competition. They established a dynamic process for their development based on trust, learning and mutual respect.

The productive apple region is located in an isolated and mountainous environment where people have shared a language, culture and social values that are different from any neighbouring Italian region. This isolation contributed to the creation of a dense social network where human relationships, common language and beliefs and trust allowed a fast transfer of

information, easy knowledge sharing and creation of social capital.

The average apple farm in South Tyrol is 2.5ha, while in Australia it is 30 ha. These alpine growers are the most cooperative, community oriented, congenial farmers imaginable. They compete, but not with each other. Land almost never changes hands and there is little incentive - or opportunity - to grow the farm.

Fragmentation of agricultural land and formation of large estates were avoided with the introduction of a closed farm system legislation in 1952. With this policy, land cannot be fragmented or divided, but is handed down to one of the children to preserve the continuity of a single farm. This ensured conservation of viable production units. Land stays in the family for generations. It is worth one million Euros per hectare!

It can be seen then, that South Tyrol's apple industry has a successful, many-layered co-operative structure. There are 8,000 growers which are members of the 43 packing cooperatives. The two large marketing cooperatives, VIP (Val Venosta Cooperatives Association) and VOG (Association of South Tyrolean Fruit Growers' Cooperative) are owned by these same 43 cooperatives.

Annual statistics on growers' operations are broken down for VIP and VOG and become fully transparent to the public. The statistics are collected by Raiffeisen Landesbank, one of the major banking groups in South Tyrol. It is in their interest to know how the apple industry is progressing; it gives the bank the knowledge and confidence on which to make their lending decisions.

Significantly, European farmers receive A$90 billion per year in subsidies and while international prices can be unprofitable, which would signal an excess supply problem, the governments of countries such as Italy subsidise growers in low-price years. For example, they will buy excess fruit ('withdraw from the market') when crops are large. This artificially inflates grower returns, mitigating the market signal of low prices to remove some orchards.

Case Study - Klemens Letcher

Background

Klemens Letcher is a 25 year old, sixth generation Italian orchardist. He owns 14 ha of farming land, which is large for this area, as the average orchard size is two hectares and the land is valued at a million Euros per hectare. As a result of the closed farm legislation, Klemens inherited the farm and has paid out his two siblings based on the turnover of the farm, as it is impossible to pay out on the land value.

It is due to his inheritance that he can make a reasonable profit. In any of his financial proposals, the land value is never accounted for, due to the fact that it can never be sold.

A SWOT analysis of the Letcher farm, as a representative of the South Tyrol cooperative, shows that despite the weaknesses and threats, the strong cooperative system and government intervention in the form of legislation and subsidies, enable the apple industry to thrive.

WEAKNESSES ● Growers do not make their own decisions. ● Little incentive or opportunity to grow. ● Small acreages mean most growers must have additional jobs. ● Reliance on subsidies for profitability ● Land assets cannot be sold. ● Subsidies inflate grower returns, mitigating the market signal of low prices to remove some orchards.	**STRENGTHS** ● Geographical cluster. ● History and culture. ● High yields. ● Cooperative members of large marketing structure. ● Detailed production statistics. ● Intensive culture since area is limited. ● Italian policy is strongly pro-agriculture and the tax load is minimal. ● Central location in Europe.
THREATS ● Reliance on government subsidies. ● Urbanisation around growing areas limits spraying capability. ● Closed land system means land cannot be sold or used as collateral.	**OPPORTUNITIES** ● Research is aimed at driving up yield and quality so growers can make more income per hectare.

Figure 9: SWOT analysis –Klemens Letcher and South Tyrol

Key Learnings from South Tyrol

- The cooperative and collaborative structure enables the industry to effectively market its products.
- Good data collection ensures the banks are willing to lend, as it gives them knowledge and confidence.
- Subsidies give unrealistic values and are critical for the success of the industry.

Chapter 5: Conclusions

The author's study of the apple industry in various other countries has raised several issues which are relevant to the Australian apple industry. These issues are discussed more fully here and recommendations are made to help ensure that the apple industry in general and the small family-owned farm in particular, not only survive, but thrive.

Consolidation and specialisation

There is a typical pattern of consolidation in agriculture, where the industry remains static for many years and then another wave of consolidation occurs, as new factors drive change in the industry. The most prominent new factors are market conditions, international competition, increased customer concentration, introduction of new technology and increased capital costs.

The author sees the Australian apple industry as being poised to progress to this next stage of consolidation, as supermarkets limit supplier numbers, as pre-packaging becomes more the norm and as more food safety legislation is introduced. Ethical labour and food traceability require expensive capital expenditure on new technology and new systems.

Consolidation can take many forms, but most common are horizontal mergers that achieve scale and mergers for vertical integration. The first form spreads capital costs over a greater revenue stream and enables a company to better drive margin expansion through scale to cut costs. The second, vertical integration, enables companies to control the value chain and ensure high quality standards throughout the chain and driving down costs and capturing margin throughout the value chain.

The apple industry is not immune from economic reality, and consolidation is on the horizon. The safe market over the past few decades has clouded changing industry dynamics, including larger capital investment requirements in the form of packing technology, continued consolidation amongst customers, customers' desires to deal with few suppliers who can provide year-round product with guaranteed minimum quality. These suppliers need to offer workers as close to full-year employment as possible in order to ensure a sufficient supply of workers.

The dynamics driving industry change are natural and while they can be viewed as a risk, they can also be viewed as an opportunity. Because consolidation occurs in waves, it is important to understand where the industry is going and what it will be like in the next five to ten years.

It is the author's opinion that there will still be smaller, independent growers who serve a niche, perhaps organic products or varieties that are not practical or profitable for larger farms to produce. At the other end of the spectrum will be large, vertically integrated suppliers of year-round products.

The mid-sized producer is viewed as most at risk, as they are large enough to have the scale to capture margin and compete against the larger suppliers, yet too large to capture a niche market. Also at risk is the small producer who does not serve a niche with a superior product.

So how do the mid-sized and small players strategically adapt over the next five to ten years, to changing industry dynamics? The author considers that there are four primary ways to adapt:

1. Become a high-quality producer in a niche or premium sector. Organics are at present the most attractive opportunity, given premium pricing and market growth ratios.
2. Joint venture with other mid-sized players in the value chain. As the market continues to consolidate, the type and structure of the farm and partnerships will need to be carefully thought through, and their structure and economics may need to change.
3. Consolidation - buy-side. Some mid-size players believe, and rightfully so, that they have the know-how to become larger players, but they lack the capital. Capital, both equity and debt, is available for growth and acquisition. Certain structures exist to access the capital without giving up full control or putting the core business at risk.
4. Consolidation - sell-side. This last option is to sell the business either to a competitor or a financial buyer. Selling to an industry competitor most often means selling 100% and giving up control, while selling to a financial buyer can be structured as the scale of a majority, with the owner retaining a minority stake and day-to-day operating control.

In a period of industry consolidation, good and viable options exist for those business owners who proactively think through their opportunities and can honestly assess their own competitive advantages. The business owner most at risk is the one who ignores market dynamics. It may

be that a business is well positioned for now and in the future, but a careful analysis and a proactive approach should at least be given consideration (Michael Butler, Chairman, Cascadia Capital - Good Fruit).

The New Zealand apple industry has shown that consolidation of farms was beneficial to the industry as a whole. Unprofitable farms were consumed by more profitable businesses and production quality and quantity were improved.

All three case-studies showed that limiting the number of varieties of apple was beneficial, as long as this is part of a continual renewal program and is responsive to market demand.

It is the opinion of the author that the industry needs to look at the New Zealand model and concentrate on consolidating packhouses. As stated in the introduction, 88% of the Australian supply ends up at domestic supermarkets. Modern packhouses, with quality control and continual supply of produce, and with the ability to adopt new pre-pack demands and export readiness will be the future. The fact that some districts in Australia are already achieving success with this model lends weight to this idea.

Specialisation has also been shown to be effective. In New Zealand, RJ Flowers' decision to become a professional grower has paid dividends, allowing the business to concentrate its funds and its efforts on what it does well, thereby improving profits. Conversely, in Washington, the Gold Digger cooperative's decision to branch into grapevines, about which it knew little, contributed to the demise of that business.

Formal cooperatives or informal cooperation?

The benefit of cooperatives is that they combine the wealth and resources of many individuals and harness them in a united way and in some instances, they work exceptionally well, but in other situations they are not so successful.

In order to survive and adapt, the South Tyrolean apple industry required ongoing cooperation rather than competition. They established a dynamic process for their development based on trust, learning and mutual respect. Since its inception, their cooperative system has been concerned with the economic interest of its members, focusing on storing and marketing their

members' apples and negotiating the best possible selling price. The three fundamentals of keeping cooperative together are:

1. One member one vote (regardless of size or status);
2. Members' duty to deliver total crop;
3. Cooperative's duty to accept full harvest.

By contrast, the Gold Digger cooperative that worked so well for so long, eventually collapsed after decisions were made that were not in the best interests of the growers. Clearly then, cooperatives are not always a silver bullet.

So, what of cooperatives in Australia? Australian farmers often appear to be reluctant to be cooperative, perhaps with a view to competing with their fellow growers for market share. Looking around Australia, the remaining major cooperatives are struggling with questions of ownership and structure. There are three commonly held theories explaining why cooperatives are not successful in Australia:

1. The absence of farm subsidies mean the Australian farmers need to retain as much profit from their business as possible, making them reluctant to contribute some of the profit to enable cooperatives to develop and grow.
2. Farmers often live long distances from towns and cities and therefore attract participants who are self-sufficient and used to working on their own, and who are not comfortable in a cooperative structure, as distinct from the farmers in Italy who have a long history of cooperative involvement.
3. The Australian Government has a history of regulation of the agriculture sector through statutory marketing boards and single desk selling arrangements. The theory is that these structures have outlived their usefulness and in some instances, have resulted in significant financial pain for farmers before they were finally dismantled. As a consequence, Australian farmers are somewhat reluctant to participate in collective marketing arrangements.

Whatever the reason, the result is that Australian agriculture has developed few strong cooperatives and those that do exist are often a takeover-target for large multinational

corporations, as has been the case in the Australian milk industry.

While a majority of Australian agriculture output is produced by the top 25% of farms, there is a real untapped opportunity for medium-sized farmers to collaborate and increase the importance of their contribution. While Italy, US and NZ have long embraced collective action, Australian cooperatives have declined due to economic, socio-cultural, structural and legal factors. Competitive farmers who see that they are doing a really good job in their farms tend to be reluctant to throw in their lot with their neighbours.

In contrast to South Tyrol, expansion and competitiveness seem to be part of the Australian culture, while geography and government legislation further discourage those in the industry from forming successful cooperatives.

Continual renewal and succession planning

The New Zealand case study highlights the benefits of continual renewal and succession planning for small family-owned farms. Annual self-assessment informs the long-term strategic plan and incorporates budgeting for land purchases, professional development of staff and replacement of 5% of the apple orchard each year (based on market analysis of consumer demand). In the modern era of farming, it is not sufficient to blithely continue with long-term practices with the expectation that 'everything will be okay'.

Succession planning must consider the financial needs of older generation, and their possible desire for continued involvement in the business, whilst still considering the needs of the next generation. Assets need to be shared equitably, and the younger generation must have some sense of financial autonomy and a sense of ownership of the business and its decisions.

As the average age of the Australian farmer is about 55 years, we need to incentivise the next generation to stay in the industry. Is there enough incentive? Or alternatively, is there an opportunity for young and new farmers to enter the industry with loan fee reductions and farm credit that may offer interest-only loans? The US Department of Agriculture, through its farm services agency, has a beginning-farmer loan program for real estate and operating expenses and often partners with local banks or farm credit cooperatives, each sharing part of the loan.

If we are to keep and encourage more young people into the industry, then perhaps Australia needs to look at a program such as this US model, that is designed to help young, beginning or small farmers gain access to capital and financing.

Marketing

All three case studies showed the importance of marketing in a successful fruit industry.
To help arrest the declining consumption, a twofold approach is warranted:

1. Advertising revenue must be increased manyfold to compete with the promotion of 'health-bars' and drinks. The industry has much to be proud about and targeted advertising of the health benefits of apples, the clean-green production and the superior taste of new apple varieties is needed to compete with these alternatives.
2. Inferior quality product must be prevented from reaching our supermarket shelves. Customers who have been enticed back to apples should have a consistently positive experience, rather than being disappointed to discover that they have bought second rate fruit.

Investment

As an industry, we need to ascertain how to attract external investment for the much-needed infrastructure. Growers opting to stay in the industry need to use their own equity and go into debt to invest heavily in new varieties and intensify planting systems. Only then will their profitability and productivity improve.

Our industry relies on the domestic market and this is already over-supplied; production is increasing and consumption is declining, prices are low and margins are continuing to be squeezed. Investment into the industry can help improve returns but it needs commitment from industry and government.

There may be many readers of this report who have the opinion that they have invested heavily in their farms. However, if the industry does not concentrate on 'giving a hand up' to the lower

20% of growers who are struggling, then there will be continued oversupply of inferior fruit on the market, which is going to continue the decline in consumption.

The key issue with understanding the financial performance of apple farms is the huge difference between the average and excellent as well as between different varieties. The difference between an average dairy farmer and an excellent dairy farmer in New Zealand is estimated at approximately $1,500 per hectare (Ben Holmes, dairy farmer NZ). In the apple industry, when comparing average versus upper quartile can be a much as $20,000 profit per hectare within farms producing the same variety. In New Zealand, this difference can be as much as $100,000 profit per hectare between the average performance of producers of a poor variety and an excellent performance growing high-paying variety (Jonathan Brookes, Agfirst).

With these figures, one would think it there would be no alternative but to intensify with a high-end variety. However, the two most crucial limiting factors to do this is time and capital. It takes five years and $100,000 per hectare to establish or restore a block before any returns, let alone profits, is realised. With the average age of farmers now at 55, it is hard to justify this when they are going to be 70 before the block pays back. (This was very noticeable in Oroville, USA where many members of the cooperative had not reinvested into the orchards over many years and in fact made the choice to convert to organic farming on existing orchards, with mixed success).

In addition, if the grower decides in the meantime to exit the industry, the valuers will use the comparable sales method to value the farm. As the industry is experiencing its challenges, there is limited interest in apple orchards and therefore the evidence of sold orchards will be used to value the property. Vineyards are a case in point: growers who do not value-add and make wine are basically growing a break-even commodity. This means that currently, the banks consider vineyards as ‘land value only’.

The second limiting factor to intensifying with a high-end variety, is the access to capital to do so. Finance based on landed security is also subject to bank policy. Banks often take a conservative view of how they lend against the security of the orchardist as they see this form of agriculture as high risk. Some banks express a preference to lend larger amounts to broadacre farms, as they consider it as a more simple agricultural enterprise with reduced volatility.

It is obvious therefore, that there is a large capital gap between what the banks are willing to lend and what is required to intensify and improve profitability. Investment is therefore required to fill the gap between what the banks are willing to lend and what is required to invest in intensification.

Why doesn't the industry attract the investor?

- Perishability - need to sell the produce within a set time and therefore at the helm of the market price.
- Liquidity - an orchard takes five years before it starts bearing and therefore is not attractive to the investor wanting to exit in five years' time.
- Orcharding is a volatile and specialised industry: knowledge is garnered over generations and is difficult for those from other farming backgrounds to break into.
- Corporate investors are looking for 'going concerns' with scale and turnover of $10 million plus.
- Complicated family structures are not always ready for investors - some have 'creative accounting' with little long-term vision.
- Return on investment targets are hard to reach, given the value of the land in some of the apple growing regions.
- Data - the Italian experience demonstrates the advantage of data collection: as Raiffeisen Landesbank continuously collects data on key indicators, the advantages of investing are clear. In Australia, there is some fragmented data collection by individual growers, but no centralised data collection for the whole industry. The author believes this data collection is essential if the Australian apple industry is to attract investment.

Why we require data

If we are going to attract the investor, the investor needs to be able to compare horticulture, or albeit, agriculture as an asset class against other asset classes. How can the 26 year old analyst encourage the investor to diversify into the sector if s/he hasn't got any of the performance data to go on?

Why don't we have the data?

The Australian Bureau of Statistics (ABS) consolidates a lot of the fruit and vegetable statistics

with nuts and turf. There can be a large difference between a struggling apple orchard and the almond industry, for example. However, the industries are small and it is costly for ABS to collect this data.

Data collection has not been part of any industry strategic planning. It was interesting to learn that no research and development projects, concerning data capture and analysis, have been put up to Horticulture Australia (HIAL) as part of any strategic planning for any horticulture industry.

Our structures and geography make data collection difficult, especially when compared to Italy with only one structure and the relative small size of the South Tyrol region.

Our mindset about sharing information in Australia is challenging. Mindset is obviously a crucial factor in attracting finance. Once we have the mindset and structure (whether cooperative, corporate or single units) to provide a medium to transparently collect the data, we can then collect the comparative orchards business analysis figures to benchmark within industry.

If all Australian horticulture industries collected the business performance data it could be used to compare each industry and furthermore other agricultural industries.

The long-term investor diversifying into our asset class enables players to:

- Improve efficiency through integration and collaboration of entities which will make growers more cost competitive in the global marketplace.
- Provide the scale to attract event further investment and have more control of the supply chain.

Chapter 6: Recommendations

Recommendation 1:

Australian apple growers need to consolidate and specialise.

Recommendation 2:

The author does not see cooperatives as the future of Australian apple growing, but believes that a lot can be learned from the South Tyrol growers' ability to succeed by working together.

Recommendation 3:

Growers must plan for continual renewal and succession.

Recommendation 4:

To help break the supermarkets' stranglehold on the distribution of the fresh produce dollar, Australia needs to increase its share of the export market. This will take an industry-wide effort and possible government support.

Recommendation 5:

The apple industry needs to cooperate to enable the collection of high quality data and to use this data to attract investment.

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Plain English Compendium Summary

Project Title:	*The Australian Apple Industry: Can the family-owned farm survive?*
Nuffield Australia Project No.:	1515
Scholar:	Fiona Hall
Organisation:	Apple and Pear Limited Australia and Horticulture Innovation Australia
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Objectives	To identify best practice in the apple industry in other countries and show how these practices could be used to improve the viability of the Australian apple industry in general, and the family-owned apple farm in particular.
Background	The Australian apple industry is at a tipping point; production is increasing, consumption is declining, growers' margins are decreasing and export opportunities are scarce. As part-owner of a family apple farm, the author is keen to see the industry not only survive, but thrive, so that future generations will be proud to be a part of it as they come of age.
Research	Research was conducted in USA, Italy, United Kingdom, and the UK. Information was gained from all target countries, but case studies were conducted in Hawkes Bay, New Zealand, Washington State (USA) and South Tyrol (Italy).
Outcomes	Information gathered from this study indicates that the Australian apple industry as a whole, and small family-owned farms in particular, need to consolidate and specialise, develop better marketing opportunities (including advertising, quality control and development of export markets), develop succession plans and programs to attract younger families, conduct annual renewal and attract investment.
Implications	Australian apple farmers are facing diminishing farm-gate returns. Inaction is not a choice.
Publications	Aspects of this research (particularly the need for attracting investment) were presented at 2016 Nuffield conference, Adelaide, on 15-16 September.