Kiwifruit Supply Chain

Mark Mayston

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Introduction –

The Industry triangle is made up of 3 key participants:

Growers

Zespri Suppliers

Each plays a crucial part in the integrity of the supply chain, though the supply chain is controlled mainly by suppliers and Zespri.

The Suppliers role is to supply a product of quality and consistency that Zespri can take to the market with confidence, manage inventory and quality changes i.e. condition checking and repack on behalf of the growers.

Zespri's role – Zespri has a duty to maximise the pool return for all growers.

The Zespri brand has taken some time to create, as the brand embodies the pride growers have in their fruit, and the commitment Zespri and the industry makes to deliver the brand promise to customers.

Growers share a duty to deliver consistently high quality, high taste fruit.

This is the fundamental basis we as growers have built this industry on. As an industry, we have to provide a high level of service to the market and customers and the right product to the right customer, hence this project.

We also have a duty to manage the supply chain in the most cost efficient manner.

Dealing with perishable produce, we have to respond to crop and market changes. This is both a short and long term objective.

Objectives –

When I first decided on this topic, the plan was to evaluate the pros and cons of suppliers having a direct relationship with the customer. To a degree, this happens already, but are there savings to be made for the supplier to provide the exact product that the customer wants?

Currently, the customer, and remembering, the customer might be a wholesaler who buys from Zespri Inventory (Zespri's inventory is made up at any one time of particular size and pack types). Customers have some choice on size, but not a lot of choice on the box packaging it is delivered in. Some wholesalers will take the product from the Zespri box and either repack into their own packaging, or prepack. The particular customer used for this theory based project, prepacks a mixed sized band into prepack bags for supermarket distribution.

We will go through the cost benefits and the cost increases to provide this product to market.

This will be broken down into two areas:

Packhouse Supplier
And Market place or wholesaler

For the purpose of this project, we will not be looking at shipping and transport in transit.

Background -

While it might appear that Zespri Supplies a relatively simple consistent product, this is made up of large Inventory consisting of different packtype, labels, size, taste band, and pest status and also suppliers are shipping fruit based on quality and storage attributes.

<u>Understanding the Kiwifruit Supply Chain</u>

There are fundamentally two different ways to configure a relatively long supply chain from New Zealand to our markets.

1. Pack the fruit into freight efficient packs

- Inventory flexibility is lost at time of packing
- This suits closer and smaller markets where fruit leaves in good condition and does not require rework in market before sale.
- Delivery can be direct to the customer with minor quality issues that Zespri can manage through a claim process rather than in marked product rework.

2. To minimize handling in New Zealand and to pack fruit into retail packs closer to the market.

- Utilise freight efficient bulk packaging
- Consolidated market inventory
- Ability to transfer fruit into customized packaging
- Advantage is Pack flexibility is maintained until customer orders.

Currently -

Approximately 80% of fruit is shipped in freight efficient bulk packaging into Zespri controlled hubs in Europe and Asia. 20% of product is shipped directly to customers.

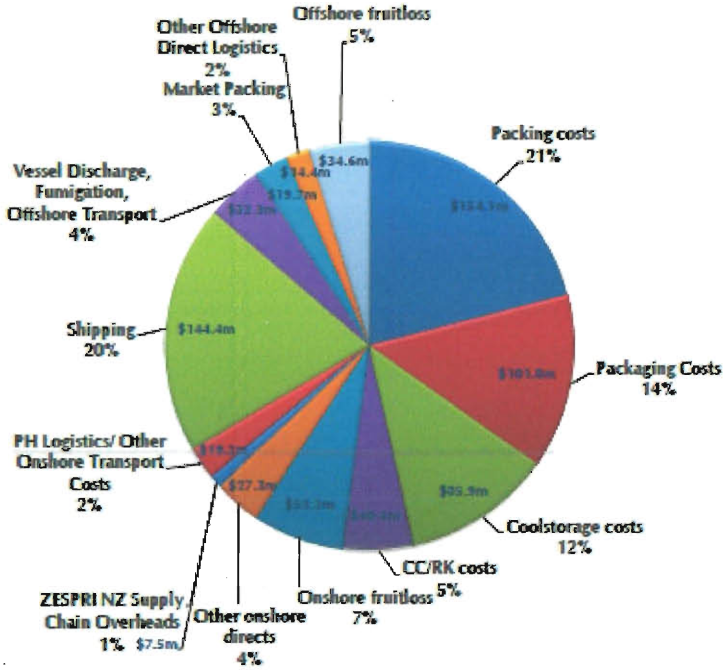
Some customers may be managed better by having a direct relationship with a New Zealand based supplier so that the fruit is packed only once, the more we handle the fruit. The higher the risk of outturn fruit loss.

3. SLA's (Service Level Agreements)

Zespri currently has contract agreements called SLA's (Service Level Agreements) with suppliers, to supply fruit outside the current contractual arrangements. These are mainly directed to late supply and quality need. Following is an example of our SLA Agreement.

Zespri is always investigating ways to supply good quality fruit cost effectively late in the season and these contracts are the basis of this.

4. Industry Supply Chain cost breakdown



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TOTAL	**735,009,280**	

Case Study

The start of this process begins with the post harvest supplier. They are contracted by the grower to pack and Coolstore fruit until such time Zespri places an order.

Suppliers have a 'pack plan' which is supplied by Zespri. The pack plan is a breakdown of packaging type by market, and quality and size specifications.

Zespri have several 'pack plan options' depending on the market and customer.

Zespri holds a large inventory offshore in a number of different countries, to ensure faster distribution throughout the world, at shorter notice than could be possible from NZ.

'Pack Type's are kept simple. Because of the large inventory Zespri keeps, it is impossible to supply every customer with their own desired 'pack type'.

Is there room for a supplier to have a direct relationship with the customer or wholesaler to remove costs for the Supply chain? What savings can we make??

Customer A
Based in Malaysia, Customer A is a wholesaler for a supermarket chain. They buy 10kg Zespri bulk packs in fruit size 36 and 39. This fruit is exported by Zespri in Zespri branded boxes. Count size 36 and 39 these are two different size categories.

On arrival, this fruit is removed from the Zespri branded boxes and the two sizes are blended together. They are then prepacked into net bags or punnets.

How could we reduce the cost of this process for the customer?, and gain a greater return for the grower?

Firstly, we source a generic unbranded box, so this box is brown in colour with no graphics.

Additional to this, over the past couple of years, we have developed an automatic packer. This is a machine that picks each piece of fruit up and places it in the tray with no human intervention. On this machine, is also a shaker.

In the packhouse, by combining the two 'count sizes' in the one box, we would be able to utilize our machine much more efficiently.

Being packed in the 10kg boxes, we would utilise the automatic filler. By using this machine, we require minimal labour. The machine pushes the box through, fills 106 fruit, the box then moves into the shaker. The box is shaken for approximately 10 seconds, then pushed out automatically, placed onto a pallet and automatically, the pallet is then strapped ready for export.

A 36 count box has 99 Fruit per box. By using the shaker, we can fit an additional 7 pieces of fruit per box. If you remove all the fruit from the box after it is packed and try to pack them back in, you can't.

So this is an extra 700 fruit per pallet. We would be shipping this fruit to Asia in a 20 foot container. With an extra 700 fruit per pallet, 9 pallets per 20 foot container, an extra 6300 fruit per container can be supplied within the same space requirements.

We need to be very careful here, because of the wider weight bands of two count size fruit, we have the potential to exceed the maximum weight allowance of our container weights. This is more to comply with NZ transport law rather than shipping specifications.

With the onshore process completed, we can now evaluate the cost benefits.

Cost Saving Breakdown

Packaging	0.140
Packing	0.26
Shipping	0.11
	0.51

Customer Cost Saving breakdown 0.09

With large savings in packaging, packing and shipping, the customer also directly benefits by 0.09 in Labour saving.

Limitations –

As the customer currently purchases directly from the Zespri inventory in Malaysia, and the supply for fruit when required is fast and quality is guaranteed as Zespri has monitored quality while in inventory.

To have the direct relationship with a supplier, there needs to be a large amount of forward planning on behalf of the customer, as there would be no Zespri inventory to call on and quality issues would have to be dealt with on a per claim basis.

It is the three week shipping programme that creates some issues, along with guaranteeing quality especially late into the season.

Conclusion –

From the outset, we have found that there are some large savings to be made, mainly for the supplier in the form of packaging and labour. If we look deeper, we find that not having a Zespri inventory to call on and to guarantee quality with their in-market staff, we would find the position difficult to manage without an order commitment.

This is one customer out of 100's we find without a commitment to a certain volume level. We then face the difficulties of having to create another product inventory line where only one customer draws product from.

If the customer obligates to a volume guarantee, then the direct supply proposition has the potential for greater return, on the basis that we can manage any quality issues later in the season.

At the end of the day, our aim is to save time and money which results in lower fruit loss, a reduction in costs, and a higher return to the New Zealand growers.

SERVICE LEVEL AGREEMENT

SLA Number. 2010-54

BETWEEN:	**ZESPRI Group Limited ("ZESPRI / ZGL")**
AND:	**Contractor (the "Contractor")**
DATE:	**3rd June 2010**
SUBJECT:	**2010 SUPPLY OF LATE GOLD**

1. BACKGROUND

ZGL acknowledges that there are benefits to the ZGL Pool in being able to supply better storing ZESPRI® GOLD in the later weeks of the season, and intends to undertake a Service Level Agreement with the industry to secure a volume of quality fruit for shipping to the Japanese market in ISO Week 31.

2. TERMS OF AGREEMENT

2.1 CONTRACTED VOLUME

(a) The terms of this agreement relate to the following volume:

Pack type	Size	TE
IT	30	
	33	
ML	36	
	39	
Total		

(b) Fruit supplied under this agreement must meet the following requirements:

(i) ZESPRI® GOLD Conventional

(ii) Taste Band Y

(iii) Protocol N

(iv) Japan OK and China OK (i.e. Lorsban-free)

(c) Prior to ISO Week 26, the Contractor may reduce their contracted volume. From ISO Week 26 onwards, DIFOTIS charges will apply in accordance with 2010 Supply Agreement, with no end of programme exemptions.

(d) For the avoidance of doubt, the Contractor's share of the fruit supplied under this agreement has been calculated by supplier share of ZESPRI® Gold Conventional (for those participating). If this share exceeded indicated EOI volume then a reallocation on share has been made.

2.2 RELATIONSHIP WITH 2010 SUPPLY AGREEMENT

The Kiwifruit and Services supplied or provided under this agreement are subject to the terms and conditions of the 2010 Supply Agreement, including the requirements of the ZIL Quality Manual and EDI Manual where applicable, except for the following:

2.2.1 The following provisions of the **Pricing and Payment Manual** do not apply in relation to the supply of Kiwifruit and Services under this agreement:

(a) **Clause B1.1 (b)** Time payments – refer to **clause 2.5.1**

2.2.2 For the avoidance of doubt, Wharf Inspections for Product Compliance (Wharf ECPI), as outlined in the **Audit and Non-Compliance Responsibilities** section of the **ZIL Quality Manual**, and Intercheck as detailed in **Section E** of the **2010 Supply Agreement** still apply.

2.3 CONTRACTOR OBLIGATIONS

2.3.1 Selection of Grower Lines

The Contractor agrees to select Grower lines for Kiwifruit supplied under this agreement using a set of criteria to be determined by the Contractor but taking into account the criteria outlined by ZGL in **(a)** of **Appendix 1**, and notify ZGL of these criteria by the end of ISO Week 24 (email david.tanner@zespri.com).

2.3.2 Pallet Numbers

The Contractor agrees to identify the pallets to be stored for use under this agreement by marking the pallets with a pallet visual indicator "GL". The Contractor agrees to then provide ZGL with a report showing those pallet numbers, by Grower line, by no later than the end of ISO Week 26 (email david.tanner@zespri.com) in order to fulfil **(b)** and **(c)** of **Appendix 1**.

[illegible]

The Contractor agrees to monitor the firmness of the Kiwifruit throughout the storage period in accordance with **(d)** of **Appendix 1**.

2.3.4 Monitoring of Quality

The Contractor agrees to monitor the ethylene levels of the Kiwifruit throughout the storage period as per the facility's Documented Quality System (DQS) and provide the data to ZGL in accordance with **(e)** of **Appendix 1**. The Contractor agrees to notify ZGL immediately of readings that exceed the acceptable levels as stated in the ZIL Quality Manual and to carry out corrective action immediately to avoid cross contamination of non-trial Kiwifruit. Failure to do so may prejudice any potential claim under the ZGL Marine Cargo Policy as outlined in **clause K2.31** of the Pricing and Payment Manual.

2.3.5 Reporting

The Contractor agrees to work with ZGL to provide a report detailing the logistics and outcomes of this trial (including firmness measures) at the conclusion of the program, for distribution to the industry.

2.4 ZGL OBLIGATIONS

2.4.1 Orders

ZGL agrees to issue orders for the contracted volume in **clause 2.1** upon signing of this agreement.

2.4.2 Shipping

ZGL agrees to ship the contracted volume in **clause 2.1** in ISO Week 31.

2.4.3 Quality Assessment

ZGL will undertake a 200 fruit sample Intercheck assessment after vessel discharge to determine the adjusted defect % for the purposes of calculating the quality premium due under **clause 2.6.1(a)**.

2.5 PAYMENT TERMS

The payment terms in the 2010 Supply Agreement apply to all Kiwifruit supplied under this agreement where applicable, except as follows:

2.5.1 Time Rates

(a) The Contractor agrees that the ZESPRI® GOLD Time Rates payable on all Kiwifruit supplied under this agreement will be Week 31 Time Rates. If the Time Rates have been capped by the industry prior to Week 31 in accordance with the 2010 Supply Agreement, the Contractor may invoice ZGL for the differential between the lower Time rates paid to the Contractor and the Week 31 Time Rates.

(b) If the Time Rates have been capped by the industry prior to ISO Week 31, any Kiwifruit supplied over and above the contracted volume in **clause 2.1** shall receive Time Rates equal to the week of capping.

2.6 ADDITIONAL PAYMENT TERMS

2.6.1 Quality Premium

(a) ZGL agrees to pay to the Contractor a quality premium of $0.20 per TE where the adjusted defect % of the fruit supplied under this agreement is lower than the Intercheck industry average adjusted defect % of the two preceding vessels.

2.6.2 Market Delivery Premium (MDP)

(a) ZGL agrees to pay a Market Delivery Premium in accordance with **clause B1.1(c)(ii)** of the **Pricing and Payment Manual** (subject to **clause 2.6.1(b)**) for the contracted volume supplied under this agreement, which will be additional to the Contractor's MDP Supply Allocation for Taste provided in accordance with **clauses K8** and **K9** of **Schedule 2**.

(b) A Market Delivery Premium will not be paid for any Kiwifruit supplied over and above the contracted volume in **clause 2.1**.

(c) The penalty for non supply of $1.00 per TE as outlined in **clause B1.1(c)(ii)** of the **Pricing and Payment Manual** is not applicable to the volume supplied under this agreement.

3. TERMINATION

This agreement may be terminated by ZGL or the Contractor at any time if either of the parties agrees that the monitoring of firmness or quality under **clauses 2.3.3** and **2.3.4** has indicated that the Kiwifruit is at risk of not storing satisfactorily until the anticipated loadout times.

4. DISCLOSURE

The Kiwifruit Export Regulations 1999 require that ZGL does not discriminate between Registered Suppliers and Growers, and publish information concerning its purchase contracts. Therefore, the fact of this Service Level Agreement, but not its content (i.e. price and quantity) will be published in a future edition of the Kiwiflier.

5. APPROVAL

For ZESPRI Group Limited		For Contractor	
……………………………… Signature	………………………… Name	……………………………… Signature	………………………… Name
…………/………:../………… Date		…………/…………/………… Date	

For Office Use Only
Circulation: ORIGINAL on ZGL File held by Commercial Team / ORIGINAL held by Contractor

Appendix A

For the avoidance of doubt, the following are expected to be provided to ZGL with respect to fruit selected for this agreement:

a) A statement from the Contractor as to the method used for selection of Grower lines, including the types of information used, history from Grower, KPIN and MA information
b) The total volume of product expected to be held in order to ensure that the contracted volume in **clause 2.1** is met (contracted volume + *x* volume buffer to cover fruit loss)
c) The pallet numbers selected for storage in order to meet the contracted volume
d) Firmness records for the Grower lines being stored on an, at least, 4-weekly cycle
e) Any quality assessment data from the stored volume

Supply Chain

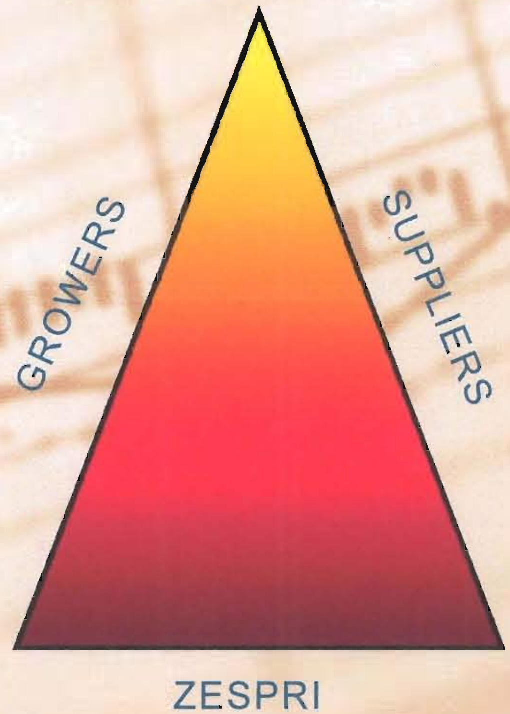
MARK MAYSTON

Presentation Overview

- Introduction
- Background – Supply Chain Graphs and SLA document
- Objectives
- Case Study
- Conclusion

Introduction

- Three key industry participants



Objectives

- To evaluate the pros and cons of suppliers having a direct relationship with the customer

1. Packhouse supplier
2. Market place and/or wholesaler

Background

- Understanding the Kiwifruit Supply Chain
  - There are fundamentally two different ways to configure a relatively long supply chain from New Zealand to our markets.

1. Packing the fruit into freight efficient packs
2. Minimizing handling in New Zealand and to pack fruit into retail packs closer to the market.

Option 1

- Packing the fruit into freight efficient packs
  - Inventory flexibility is lost at the time of packing
  - This suits closer and smaller markets were fruit leaves in good condition and does not require rework in market before sale.
  - Delivery can be direct to the customer with minor quality issues that ZESPRI can manage through claim process rather than in marked product rework

Option 2

- Minimize handling in NZ and pack fruit into retail packs closer to the markets.
  - Utilize freight efficient bulk packaging
  - Consolidate market inventory
  - Ability to transfer fruit into customized packaging
  - Advantage is pack flexibility is maintained until customer orders.

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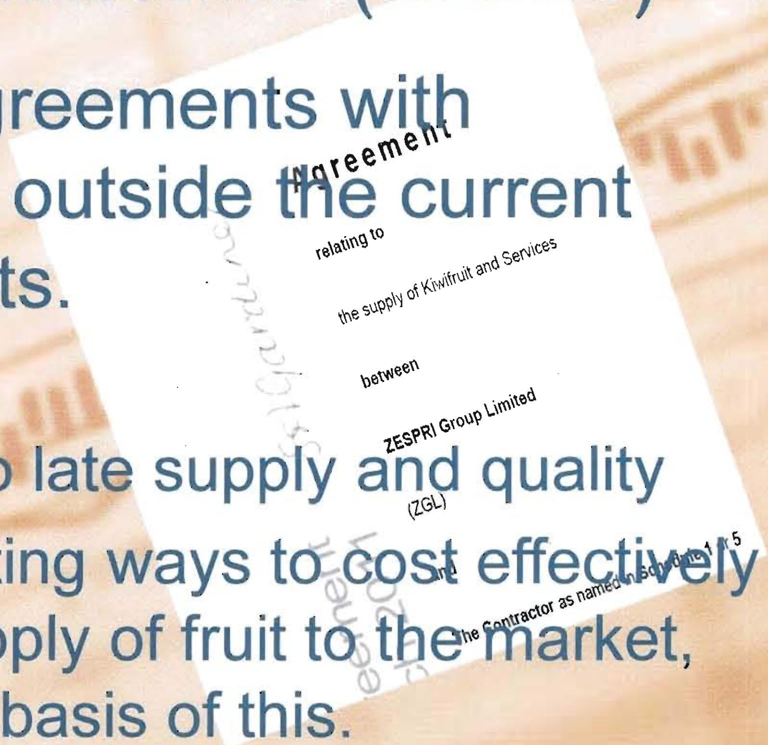
- ZESPRI has contract agreements with suppliers, to supply fruit outside the current contractual arrangements.



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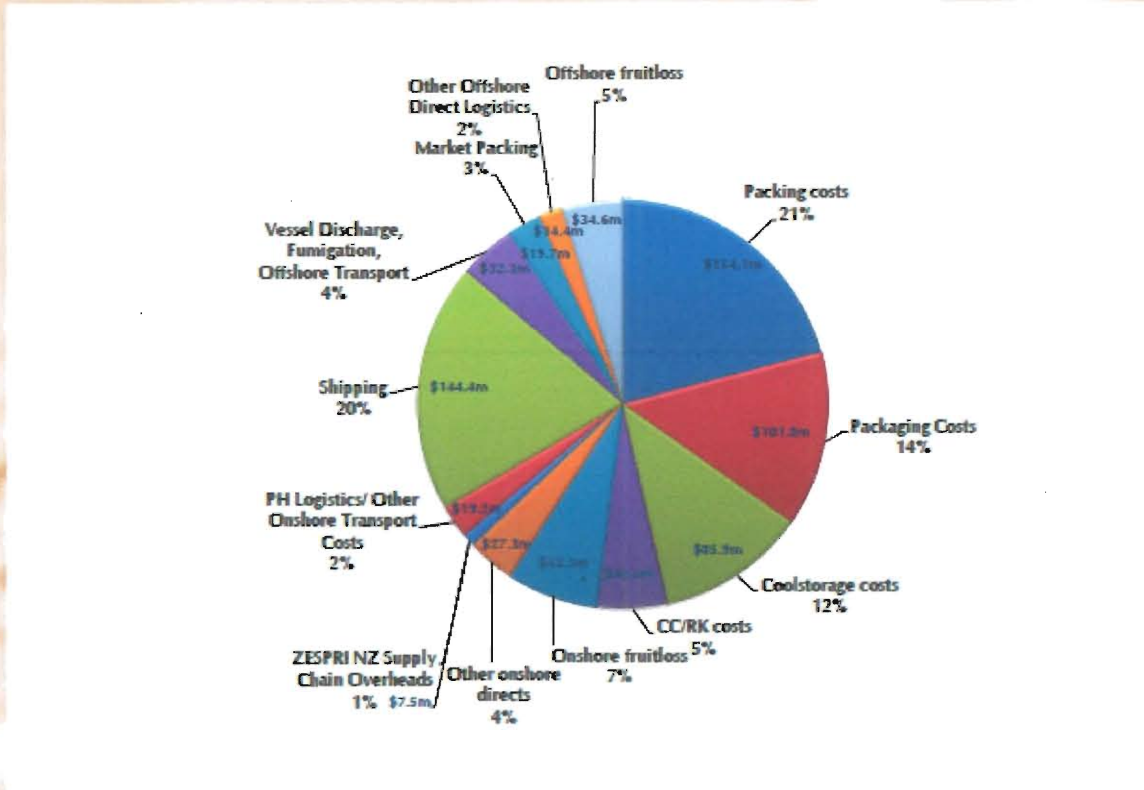
Industry Supply Chain Cost



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Case Study

- Customer A
  - Based in Malaysia, wholesaler for a supermarket chain.
  - Purchases 10kg ZESPRI bulk packs in fruit size 36 & 39
- How could we reduce the cost of the process for the customer and gain a greater return for the grower?

Case Study cont.

Cost Benefits

- Cost saving breakdown

Packaging	0.14
Packing	0.26
Shipping	0.11
Total	**0.51**

Customer cost saving 0.09

Conclusion

- There are savings to be made
- Each participant in the industry triangle is fundamental to the process
- Our aim to is save time and money which results in lower fruit loss, a reduction in costs, and a higher return to the NZ kiwifruit growers.