



Wool Selling Systems Consultancy Report

Executive Summary

The Australian Wool Selling Systems Review identified the current structures available for Australian wool producers to sell their wool are not allowing the Australian producer to achieve the best possible farm gate returns.

An online exchange such as the proposed online wool exchange portal would bring a number of advantages to the wool industry and ultimately result in increased returns to growers at the farm gate. Some of these benefits include:-

- improved price transparency
- allowing sellers to make more informed decisions
- increased competitive tension
- the opportunity to create a shift from price-taker to price-maker, and
- a more efficient supply chain in the long run.

Implementing the wool exchange portal will have some challenges, in particular the need for timely uptake by all market participants in order to build and maintain liquidity in the marketplace. However NZX's experience suggests there are a number of measures which can be taken to address these challenges.

NZX is well positioned to work with the WSSR to build a successful online wool exchange. NZX is an experienced and independent provider of market exchanges across several products, commodities and geographies. To date NZX's spread of market services includes: the New Zealand Share market, built and operates the New Zealand Energy market, built and operates the Fonterra farmers share market, built and operates the NZX dairy futures contracts and exchange, built and operates the Clear Grain Exchange (Aust). NZX can bring this skill and experience, in tandem with WSSR's wool specific knowledge, to create a successful online wool exchange. Together with NZX's experience in supplying information and tools across several agricultural commodities, this partnership forms a strong foundation to make a meaningful change to how wool can be sold.

In this document we have provided some conceptual images of what a WEP may look like however these are concepts only. The final product may look quite different to the concepts provided based on the agreed functionality required, branding, input from expert user interface designers, integrations with other platforms and industry engagement throughout the build. Any changes to these concept drawings would not be recommended until the scope of the project has been confirmed and the appropriate third party has been engaged.

Summary Costing Estimate:

Based on the structure and assumptions outlined within this scoping document (see section 2 for detail), we estimate high-level costings as follows:-

- Build and develop Ready Reckoner/Price Discovery, circa \$250-450,000 (2-3 months)
- Build and develop Connectivity Platform, circa \$450-800,000 (3-4 months)



- Build and develop Interactive Homepage for market data and decision support, circa \$100-300,000 (1-2 months)

Note: These estimates can and will likely vary considerably depending on refining the scope of work, integrations with external systems, a clearer understanding of intellectual property, size of resource allocated to the task, and on-going operating arrangements.

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Introduction to NZX Limited and the NZX Australian Agribusiness

NZX Limited is a publicly listed company in New Zealand with a market capitalisation of NZ\$264million (A\$242million). NZX enjoys the confidence of a wide range of stakeholders from governments, energy authorities, farmers, industrial companies and consumers to operate independent and reliable markets with integrity. The product range currently spans shares, electricity contracts, dairy products, and grain products. The expansion of these product sets has arisen from NZX's understanding of each market's requirements, combined with its experience in being able to operate exchanges which meet high compliance standards and therefore ensure the confidence of users.

The NZX Australian Agribusiness operates three established Australian Agribusinesses based in Melbourne. The Australian company is wholly owned by the NZX Limited (NZX) and identifies as both a 'markets' and 'information' business. The NZX corporate objective is to "build and operate markets which improve the economies in which we operate". In the Australian grain industry this means improving farm gate returns.

NZX aims to do this through improving the transparency of Australian grain markets and increasing competitive tension for farmer products. The three major brands NZX operates are the Clear Grain Exchange (operating since 2008), Profarmer Australia (1995) and Australian Crop Forecasters (1980).

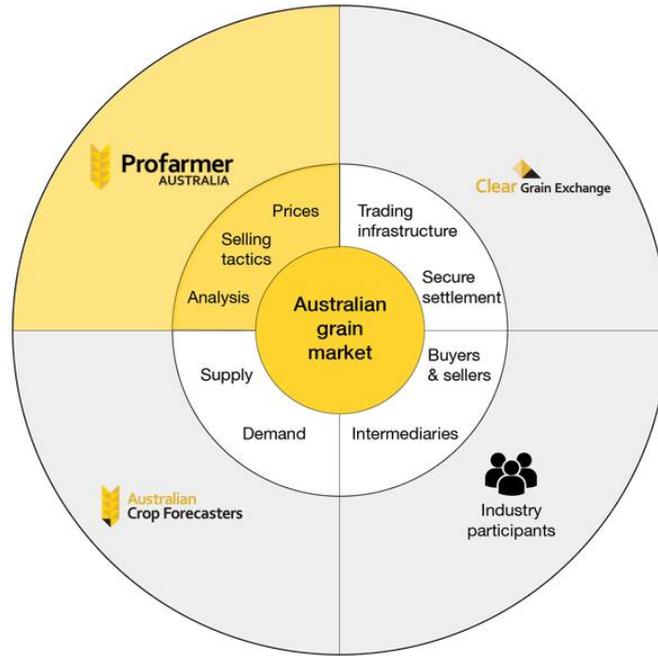
The Clear Grain Exchange provides an online trading platform that allows buyers and sellers of Australian grain to transact both physical grain and forward contracts at country storages across Australia's grain growing regions. The exchange was launched in 2008 and is Australia's largest online marketplace for grain, having transacted in excess of 3 million tonnes to date.

Profarmer Australia is an independent team of specialist agricultural commodity analysts providing strategy, analysis and tools to empower decision making for Australian agribusinesses. Profarmer Australia has maintained continual involvement with the Australian wool industry through a weekly wool and sheep strategy publication for subscribers.

Australian Crop Forecasters is the leading independent Australian grain crop forecasting service, including supply and demand and export analysis.

Importantly NZX is not a buyer, seller, or broker of grain or wool. It is a provider of an independent exchange and information services open to all market participants. This means NZX holds a uniquely independent position in Australian grain markets essential to providing industry utility type functions such as an independent exchange platform.





Below are some NZX comments on questions the Panel has addressed in “Section 6.5 The Wool Exchange Portal”.

Functionality of the WEP – What should the WEP be able to do? What services could it provide?

At a minimum the WEP should provide price transparency at the “wool grower level” across all selling avenues to market. This is the first step in enabling growers to make better decisions in selling their wool and is a first critical step in creating a more “efficient market place” and the associated advantages. Wool growers should be able to differentiate between selling alternatives based on the price they receive. In the Australian grain space NZX achieved this with Profarmer Australia offering a **price discovery service** at the grower site level. This transparency encourages competitive behaviour as wool growers become more astute to supply chain costs, competitive forces at selling points, and make better decisions as a result. In an ideal world price transparency would include prices and volumes of transactions, but also the bid and offer depth and volumes (for example, what one sees on Commsec when looking at share prices).

The second most critical function of the WEP is to make it easier for wool buyers to purchase from wool growers. This becomes a critical element to improving competitive tension and can be achieved via an introduction service for buyers to growers initially (ie. displaying bids in a public forum and allowing growers and buyers to contact each other), to providing a seamless transactional service. For example, in WA there are circa 5-6 buyers buying 90% of grain from WA growers, yet there are many more buyers wanting to buy WA grain. At this stage however, they need to buy it from the 5-6 buyers that have a network with growers. Hence there is a primary market (grower to buyer) and secondary market (buyer to buyer) that develops. On average the secondary market has traded at around a \$10/t premium to the primary market. Clear Grain Exchange brings these markets together and as a result buyers that could not access grain from growers in the past are now able to

buy directly from growers, online with no intermediaries. Hence it has improved competitive tension for farmers resulting in better farm-gate returns.

Who could use WEP?

All market participants from farm gate to end user. Efficient price discovery has value to market participant’s right along the supply chain including growers, brokers, intermediaries, logistics providers, end-users, traders, commentators, advisors, investors, banks etc. This is evident by the breadth of customers to NZX Australian Agribusiness.

What would WEP cost to set-up and operate?

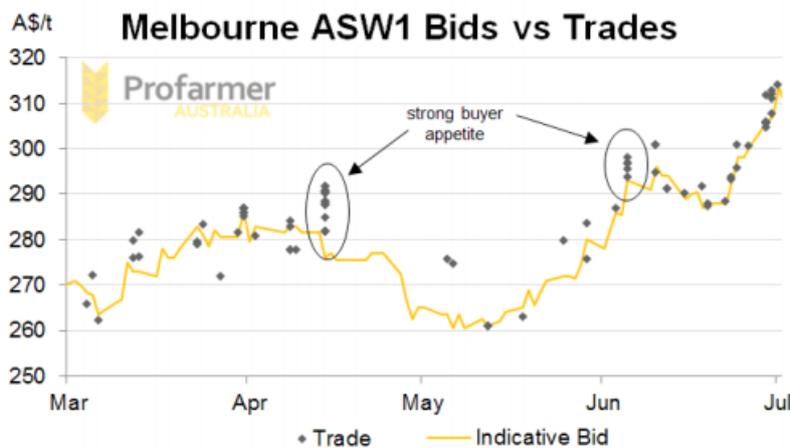
Set-up and operating costs need to be scoped in far greater detail based on the expected outcome. The difference between a minimum viable product and what is possible is considerable (“how long is a piece of string”). Hence it is important to have a clearly defined outcome and steps before jumping into any build. We provide estimates based on some basic assumptions in Section 2.

What benefits could WEP provide to growers and others?

As previously defined, efficient markets drive better economies through better resource allocation. Hence if market failure through asymmetric information has been identified, improving this scenario will result in better economic returns.

For example, price discovery in the Australian grain industry has traditionally been driven by buyer indicative bids (the classic price-taker model where buyer’s set price). But there are two sides to any market. The bid side (buyer) and offer side (seller). When these match a trade occurs and a price is established.

The chart below shows actual trades on the Clear Grain Exchange versus the best indicative bid posted by buyers and tracked by Profarmer.



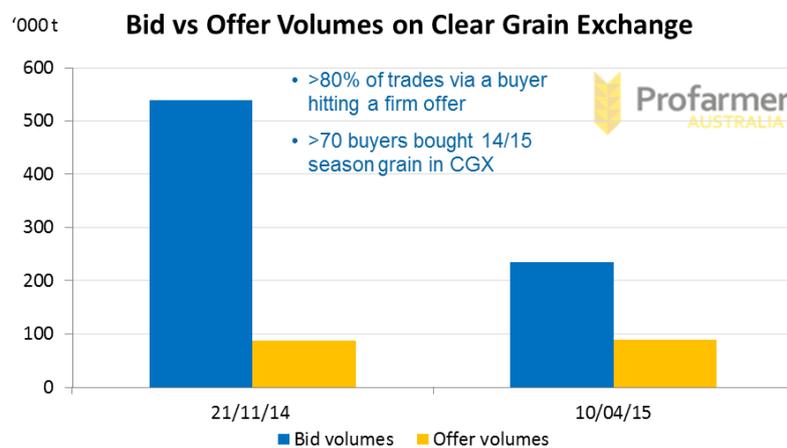
The chart clearly illustrates that by growers proactively engaging the market with an **offer price** (becoming a price-maker) they are less likely to miss potential selling opportunities, rather than waiting for the **bid price** to reach their target.

The exchange provides an efficient avenue for growers to define the offer side of the grain market at any time of the year. Hence it enables growers to offer grain at their own price in an open market, to all buyers. There is a shift from the market being solely defined by buyers (where growers as sellers are price takers) to a more balanced market whereby sellers set offer prices as price-makers.

More detail on benefits in Section 3.

Who should own WEP? Develop WEP? Operate WEP?

Most exchanges start from a “mutual” ownership structure of participants. It is NZX’s view that the most logical owners of any WEP are growers. This is because they are the stakeholders that can receive the greatest benefit through better transparency and competition. They are also the key stakeholders that will need to be involved to make the WEP a success. NZX’s experience with Clear Grain Exchange is that buyers will use an exchange mechanism if offers exist. The chart below highlights the discrepancy between bids and offers in Clear Grain Exchange on two different days.



The chart clearly illustrates the largest restriction to growth is growers placing offers in the exchange. Hence if it is grower-led behavioural change it has more chance of success and a common way to get the alignment is through ownership.

The development and on-going operating of the WEP can be quite separate to ownership. NZX is involved in a number of different models for example:

- NZ share market – NZX owns, operates this market but under the supervision and rules of the Financial Markets Authority. However the technology is often sourced from third party developers and then customised to fit the exact needs. Note this market began as a mutual shareholding between market participants before being demutualised into a public listed company.
- NZ energy market – NZX operates and has developed this market but does not own it.
- Fonterra shareholder market – NZX built a custom-made solution for Fonterra members to trade their shares
- Clear Grain Exchange – NZX own, develop, and operate this market.

If the WSSR is to seek a third party to assist in developing and operating the WEP it is critical the third party has the required skillset and expertise, but also they are independent so as to uphold the



platform integrity. NZX has a track record that fits these characteristics. It is likely the WEP will need some custom build given the uniqueness of the market. However there are likely to be some similarities in existing platforms, for example a number of features in the Clear Grain Exchange have been identified as useful to the wool market.



Section 1. Platform overview

1.1 Market Structure

An effective market place is built on several key pillars. These pillars function in unison to provide the required structure for the market place to work. Detailed below is an explanation on the role of each pillar:

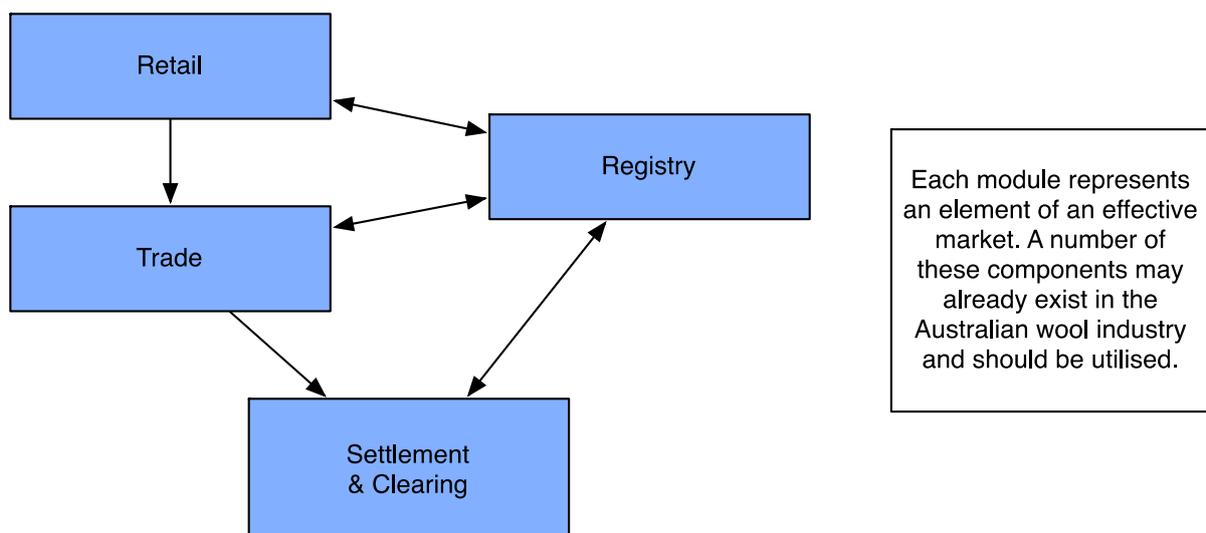
Retail: This is the customer interface distributing and providing the determined service. The retail outlet is the method or platform in which you access the services of a market place. For example the ability of a seller to view prices and offer their product.

Trade: This is the logic and system that allows the transaction of goods to take place. The system determines what is required to create a match between a seller and buyer allowing them to effectively trade their nominated goods.

Settlement: This is the process whereby it is confirmed that the buyers and sellers have the assets they have agreed to exchange, their identities are confirmed and the administrative process is undertaken to ensure the transfer of title of goods and payment occurs in a timely and accurate manner.

Registrar: This is the body that confirms the quality, volume and ownership of the goods or services being transacted. It's paramount that those transacting in a marketplace have the confidence in the description of the goods/services being transacted to participate.

Figure 1. Market Structure and Requirements



NZX Learnings

Clear Grain Exchange original structure

When the Clear Grain Exchange was originally launched, the offering amalgamated a number of these market pillars into the one Clear Grain Exchange solution. This was in part due to the infancy of the marketplace, and the fact many of these pillars did not exist so they were built. Furthermore, when the Clear Grain Exchange was initially constructed the business was not under the ownership of NZX and did not have the benefits of NZX’s expertise in markets.

What has been learnt from this structure is that the market technology operates more efficiently when the different pillars of the market are separated. By separating out these pillars the market is able to achieve improved liquidity by having several retail avenues, not just the proprietary one. It is also better able to leverage third party technology and expertise in areas where it exists.

Where NZX owns proprietary technology, separating the pillars also allows NZX to license this technology to third parties such as the proposed WEP. This allows for improved access to the market for new entrants.

NZX is currently in the process of implementing a redesigned architecture of the Clear Grain Exchange so that, where possible, these pillars are independent of each other, which is more in line with how other markets are structured (such as capital markets).

Figure 2. Original structure of the Clear Grain Exchange

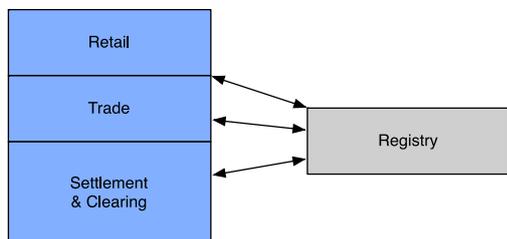
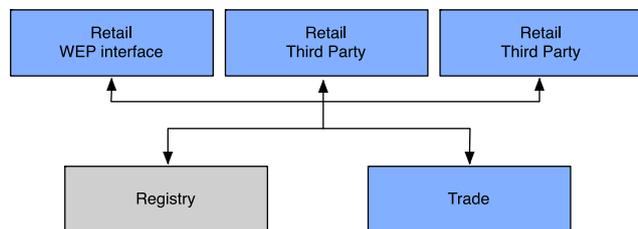


Figure 3. Advised structure of the WEP



Advised structure of WEP

It is the view of NZX, with the knowledge of previous experience with the Clear Grain Exchange that separating these market pillars creates a more robust and flexible outcome. Further to this there are economic advantages to do any build in a staged process beginning with the retail interface, followed by the platform.

By taking this approach, access to the trading platform is not restricted to one provider but rather can integrate with a number of existing third party risk and inventory management systems.

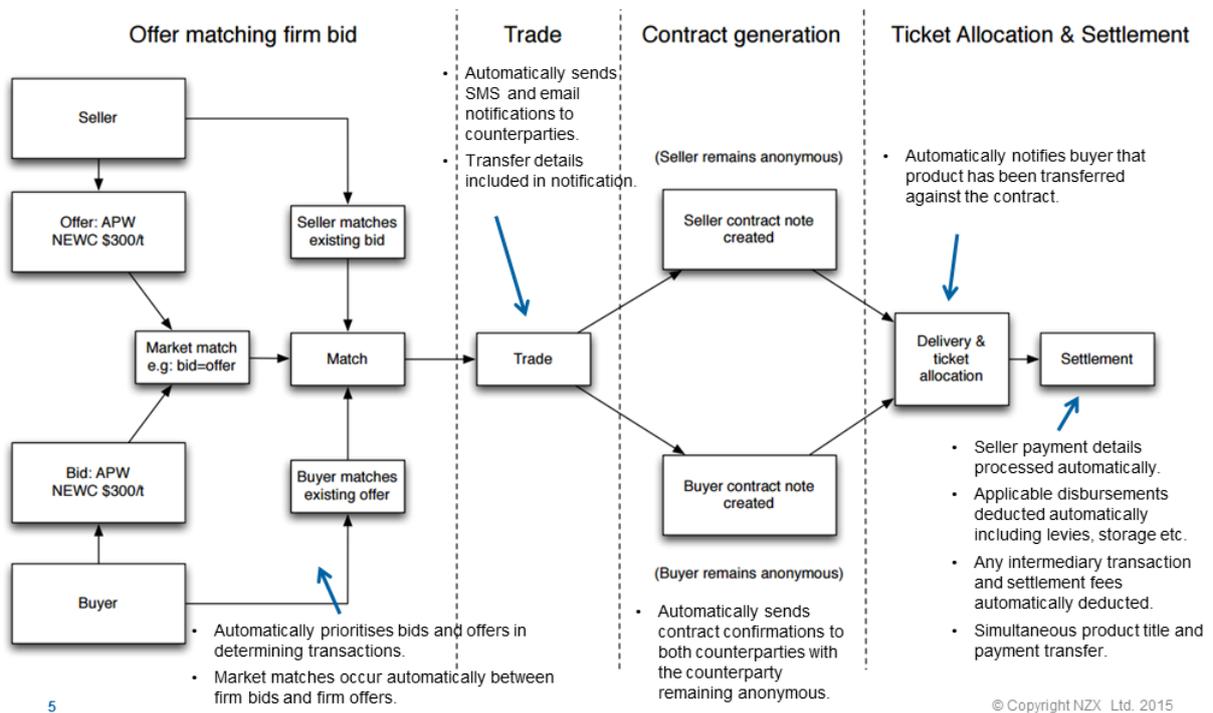
The structure utilises existing registrar services that hold tradeable information. For example the quality and quantity of wool and who owns it. This can be analogous to a catalogue for a wool auction.

Settlement can take place external to the trading functionality. For example the platform could be used to match bids and offers in the market place, generate a contract between the buyer/seller, and then the counterparties could organise settlement directly with each other.

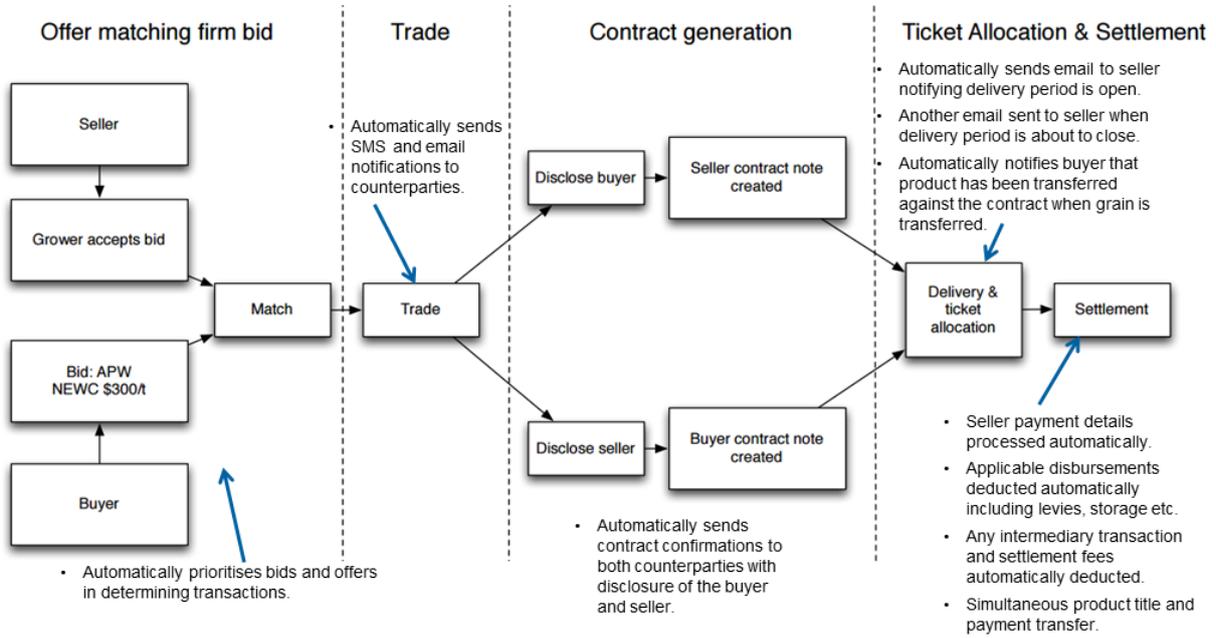
The diagrams below provide a description of each step within a transaction on Clear Grain Exchange from how customers use the platform, matching and trade process, contract generation, and settlement.

Note the first diagram below relates to Clear Grain Exchange for warehoused grain whereby the automated settlement process allows counterparties to remain anonymous. The second diagram demonstrates the process for forward contracting grain where-by settlement is separated from the trading function and as a result counterparties are disclosed to each other. In NZX's view, either option could work for wool.

Clear Grain Exchange flow for warehoused grain



Clear Grain Exchange flow for forward contracts



1.2 WEP screen examples

Detailed below are examples of potential screens for the proposed WEP. The screens are provided in order to best communicate some of the potential functions that the platform could deliver. The screens are merely diagrams to communicate these potential features. The final design would take into account the best user experience, ease of use, final functionality etc.

Listed below are a number of the key features that would be required for a minimum viable product to take place, including:

- A. **Ready reckoner/Price discovery page** – Ability for producers to determine the best suited avenue for market through true price discovery. The ‘ready reckoner’ is a proposed tool that would allow the grower to identify the different avenues to market (the existing channels as well as online) through true price discovery. The tool would display all effective avenues to sell a nominated lot of wool and illustrate the highest available price on that given day.
- B. **Sell order screen** - Ability for a grower/broker to set a price on the wool to sell
 - Broker registration screen
- C. **Buyer Screens**
 - Buy Order screen - Ability for a buyer/exporter to place a bid in the market.
 - Exporter/Buyer Search screen – Ability for the buyer to search specific offers.
 - Exporter/Buyer registration screen
- D. **Interactive Homepage/Gallery** – Details generic market information and provides tools to guide and aid decision making.
- E. **WEP market page** – Ability for all users to view/search active bids and offers in the market.

1.2 – A) Ready Reckoner/Price Discovery tool – Search Screen

This screen details the different avenues of sale available to a producer. This price discovery tool would provide the grower with the market transparency to pursue the method of sale which best suits their individual circumstances and identifies the greatest potential returns. This would include selling avenues that are external of the WEP, such as Auctions Plus, Auction etc. It would provide direct access to any one of these platforms.

A producer would outline the specifications of their wool on the below screen and then 'search' for the available avenues to market their lot.

The screenshot shows the 'Ready Reckoner' search interface. At the top, there is a navigation bar with 'WEP', 'Ready Reckoner', 'View Market', 'Sell', and 'Logout'. Below this, a blue header displays 'Ready Reckoner' and the user's name 'John Smith' next to a profile icon. The main content area is titled 'Identify the best avenue to market for your lot' and 'Enter the details of your clip to view the available avenues to market.' It contains several input fields: 'Delivery Location' (Goulburn), 'Specifications' (LOT1: 0345, Type: AA tdr, AWEX Type: MF4, Cert Type: P), and a list of wool characteristics (Micron: 19.1, VM: 0.3, BSH content: 33, Length: 80, Strength: 34, T/M/B: 70, 20, 10, Yield: 60.8). There are also buttons for 'Add another lot' and 'Add additional specifications'. A search button is located at the bottom left. Five callout boxes provide additional context: 1) The screen is only accessible by growers and is logged in as 'John Smith'. 2) The producer enters the location of the wool. 3) The producer enters the specifications of their wool. 4) The producer can add further specifications like mulesing status. 5) Clicking search views appropriate avenues to market.

1.2 – A) Ready Reckoner/Price Discovery tool – Search Results

The screen below details what a producer would see upon completing a search (previous diagram) for available avenues to market after outlining the specifications of their wool.

The producer is then provided with market information/market intel to aid in the selling decision making process. This can include historical price trends, decile maps, etc.

At the bottom, all the different avenues to market are displayed and the ‘estimated returns’ of each based on system calculations. This in turn provides the market transparency to the grower to determine which selling method will provide them with the greatest value.

Ready Reckoner | John Smith

Current Search:
 Location: Goulburn
Specifications:
 LOT1: 0345
 Type: AAAt tdr
 AWEX Type: MF4
 Micron: 19
 VM: 0.3
 BSH content: 33 33 33
 Length: 80
 Strength: 34
 T/M/B: 70 20 10
 Yield: 60.3

Market Intel
19 Micron Wool Indicator!
 The chart displays historical pricing context for the nearest indicator to the specifications entered.

Market Summary: (updated 1 hour ago)
 A healthy gain for all fine micron wools with a 35c/kg rise in the 18 micron indicator. Strong competition at Northern market auction due to the limited offering helped increase the price. Values remain considerably above last season, with particular interest for lots of high quality. Appetite is less consistent for lower quality lots and as such we have seen this discount widen.

Selling Avenue Table:

Selling Avenue	Clean Converted Price	Final Net Price
	Clean c/kg	Greasy c/kg
Exporter Unskirted	1277	877
Auction	1274	876
WoolTrade	1285	874
Exporter Spot Order	1305	871
Mill Direct	1298	868
Processor Open Mill Order	1273	866
Exporter GTC	1247	854
Exporter Physical FWD	1315	848

1.2 – A) Ready Reckoner/Price Discovery tool – Advanced detail

The screen below illustrates how a producer would be able to view further detail of a selling avenue that was of particular interest. The shot below shows an example of the detail that would be shown if one of the selling avenues was selected. In this case Wool Trade.

WEP Ready Reckoner View Market Sell Logout

Ready Reckoner John Smith

Current Search:
Location: Goulburn

Specifications

Type	AA tdr
AWEX Type	MF4
Micron	19
VM	0.3
BSH content	33 33 33
Length	80
Strength	34
T/M/B	70 20 10
Yield	60

Market Intel

19 Micron Wool Indicator!

Market Summary: (updated 1 hour ago)
A healthy gain for all fine micron wools with a 35c/kg rise in the 18 micron indicator. Strong competition at Northern market auction due to the limited offering helped increase the price. Values remain considerably above last season, with particular interest for lots of high quality. Appetite is less consistent for lower quality lots and as such we have seen this discount widen.

Selling Avenue

	Clean Converted Price c/kg	Final Net Price c/kg
WEP Firm Bid	1277	877
Auction	1274	876
WoolTrade	1285	874

Price detail

Opening Price
1400c/kg

Terms
Clean ex brokers store
7 days from date booked
Payment date: 21/08/15

Term conversion costs, includes levies bsc, pac levies etc.
126c/kg

Conversion cost make up
Full Auction cost structure
Grower delivers wool to broker's store

Clean Converted Price
1274c/kg

Wool Yield
67%

Net price to grower (greasy)
874c/kg

Advance to bid confirmation

Exporter Spot Order	1305	871
Mill Direct	1298	868
Processor Open Mill Order	1273	866
Exporter GTC	1247	854
Exporter Physical FWD	1315	848

This screen is the same as the previous however shows the display if a producer had clicked on a specific selling avenue for further detail.

By clicking on the arrow the 'Wool Trade' selling avenue has been detailed in further detail.

This section outlines the specific detail of the bid selected: delivery terms etc.

If the details of the bid matched the requirements they could advance through to accepting the bid. Whether this be by the WEP, broker or other defined selling method.

1.2 – B) Sell Order Screen

This screen allows a 'seller' to create an offer in the market which is then displayed on the WEP for all active users to view. Effectively the seller is nominating the specifications of the nominated lot they are placing an offer on, and the price which they want to sell at.

The market and subsequent buyers can then buy the specified wool at the price set by the seller if they so choose.

This page could be used by either a producer placing an offer on their wool clip/or a broker acting on behalf of a producer dependent on the model adopted. The example pictured below details that of a broker (broker 'X') whereby the broker is required to nominate the location, client he is acting on behalf of, the quantity and specifications of the wool being placed on offer and the price that is being set on it.

The screenshot shows the 'Sell Order Form' interface. At the top, there are navigation links: 'Ready Reckoner', 'View Market', 'Sell', and 'Logout'. The user is logged in as 'Broker 'X''. The form contains the following fields and callouts:

- Broker:** Elders
- Location:** Goulburn (Callout: Location of wool being offered)
- Client:** XX / Hay (Callout: The Broker will nominate the client that they're placing an offer on behalf of.)
- Quantity:** 8 Bales (760kg)
- Lot Number:** R329
- Specifications:**
 - Type: Fleece
 - AWEX Type: MF4
 - Micron: 19.1
 - VM: 0.4
 - BSH content: 33 33 33 mm
 - Length: 85 nkts
 - Strength: 37
 - T/M/B: 70 20 10 %
 - Yield: 68
 - Other: (dropdown)
- Offer price (greasy):** 842 c/kg (Callout: The price being placed on the wool being offered and the brokerage fees and deductions to be taken out.)
- Testing:** 23
- BSC:** 6.8
- PSC:** 18.4
- Levies:** 15
- Net price:** 782.6c/kg (greasy)
- Net return:** \$743.5 / bale, **\$5,947.80** (Callout: Net return based on quantity offered and price entered. This a transparent return for the grower.)

At the bottom, there is a 'Place Sell Order' button and the text: 'Place a sell order to offer your clip on the WEP'.

1.2 – B) Broker registration

This screen details how a broker might register as a user on the WEP. They would need to nominate their associated brokerage charges as well as existing clients.

WEP

Registration View Market Logout

Broker Registration

Brokerage firm

Broker code

AWEX registration number

Name

Email

Address

Phone

Brokerage charges

BSC charges

PSC charges

Banking details

Bank

Account Name

BSB

Account number

These charges will then automatically apply when they are acting on behalf of a client. They will pre-fill when matching a bid on behalf of a producer and/or creating an offer.

1.2 – C) Buy Order Screen

This screen allows a 'buyer' to create a bid in the market which is then displayed in the WEP for all active users to view. Effectively the buyer/exporter is nominating the range of specifications they are willing to buy within and the price they are prepared to pay for lots within these parameters.

The market and subsequent sellers can then match this bid if they specify their wool is within these parameters and choose to accept the price being bid. The appropriate premiums and discounts will then apply dependent on the specifications of the wool that matches the bid.

This page could be used by either a buyer or exporter placing a bid. The example pictured below details that of a buyer whereby they have specified the location in which they wish to purchase wool, the specifications, the maximum quantity and the price they are willing to pay.

Buyer Order Form Buyer AWEX #0513

Delivery Location: Melbourne
 Delivery cutoff: 3 months

Quantity: 120 Bales (12,000kg)

Price: 842 c/kg This is the price for the average specifications as entered. Each lot sold against the order will be subject to premiums and discounts.

Prices and Discounts: Fixed premiums & discounts Floating premiums & discounts

Specifications

Types: Fleece

	MIN	AVG	MAX	
Micron	19.1	20.6	20.6	
VM	0.3	0.5	0.5	
Length	80	90	90	mm
Strength	34	38	38	nkts
Yield	60	70	70	%

Additional quantifiers

Max lot size: 20
 Bid Validity: GTC

Place Buy Order Place a buy order to activate your bid on the WEP

Callout Boxes:

- User logged in - In this example Buyer '0513'.
- Location of wool wanted for purchase and the delivery cut off period in which it is required.
- Price the buyer is willing to bid. Premiums and discounts will be taken into consideration depending on the lot purchased. The buyer can also nominate whether they want fixed or floating p&D's
- The buyer will enter the specifications that they wish to buy within.
- The buyer can add additional quantifiers such as BSH content, POB, mulesing status, certificate type etc.
- The buyer will specify the length of time their bid will remain valid and their maximum lot size.

1.2 – C) Buyer search screen with advanced filter

This screen allows a buyers to narrow their buying focus. A buyer can view the specific lots that are relative to their own interests as well as viewing where sellers are pricing their wool. Actionables available to the buyer from this screen would include placing a bid against an offer, editing a bid, removing their bid etc. A buyer would be able to capture multiple offers at once through this screen which would make the buying process considerably easier.

Buyers Search Screen Buyer AWEX #0513

Search the specifications you want to view active offers matching the criteria you have selected. The filter will allow you to view only lots of interest. Click through to purchase lots of interest.

Filter search

Delivery Location: All
 Delivery cut off: 3 months
 Types: Fleece

Tick box to view wool of all specifications. Update

	MIN	AVG	MAX	
Micron	19.1	20.6	20.6	
VM	0.3	0.5	0.5	
Length	80	90	90	mm
Strength	34	38	38	nkts
Yield	60	70	70	%

Additional quantifiers

Applicable lots currently offered

Lot Number	Brand	Location	Bales	Kgs Clean	Desc	AWEX type	Micron	VM	L	Nkt	Y	Asking Price greasy c/kg	Clean c/kg	Accept	Counter offer
2357	NNN/adem	Geel	3	360	AAAM	MF4	19.3	1.3	88	32	0.649	800	\$12.33		\$12.20
628	hhh/xxx	Goulb	14	1680	AAAMTR	MF5W1	19.9	0.9	85	26	0.64	790	\$12.34		\$12.21
78954	ADJ/Wool	Adel	8	960	AAAM	MF3	19.3	0.8	88	35	0.66	830	\$12.58		\$12.45
716238	JKM/Port	Frem	7	840	AAAM	MF4H1	19.1	1.3	80	36	0.654	820	\$12.54		\$12.41
263	Gunn/YASS	Dubbo	9	1080	AAA	MF4	20	1	83	32	0.68	770	\$11.32		\$11.19
2357	NNN/adem	Geel	3	360	AAAM	MF4	19.3	1.3	88	32	0.649	800	\$12.33		\$12.20
628	hhh/xxx	Goulb	14	1680	AAAMTR	MF5W1	19.9	0.9	85	26	0.64	790	\$12.34		\$12.21
78954	ADJ/Wool	Adel	8	960	AAAM	MF3	19.3	0.8	88	35	0.66	830	\$12.58		\$12.45
716238	JKM/Port	Frem	7	840	AAAM	MF4H1	19.1	1.3	80	36	0.654	820	\$12.54		\$12.41
263	Gunn/YASS	Dubbo	9	1080	AAA	MF4	20	1	83	32	0.68	770	\$11.32		\$11.19

1.2 – C) Buyer registration screen

This screen details how a buyer might register as a user on the WEP. They would need to fill in their appropriate details and contact details.



	WEP	Registration	View Market	Logout
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Buyer Registration

Buyer Code

Company

AWEX registration number

Name

Email

Address

Phone

[Register your account](#)

1.2 – D) Gallery Screen/Interactive Home page

This screen is the reference point for users providing an overview of the current market and acts as a homepage/gallery for all users. As well as outlining general market information the page also details recent activity on the WEP. The page layout is highly flexible and should provide navigation to other features within the WEP. This page will act as a central hub for the WEP.

The screenshot shows the WEP Gallery interface. At the top, there is a navigation bar with 'WEP', 'Ready Reckoner', 'View Market', 'Sell', and 'Logout'. Below this is a blue header with 'Gallery' and a user profile for 'John Smith'. The main content area is divided into several sections:

- Market statistics:** Includes a line chart for 'AWEX|EMI|2015/16' and four summary cards for EMI (USD), AUD (USD), Offering (bales), and Passed-in (%).
- AWEX Summary:** A text block providing market commentary, updated 1 hour ago.
- View weekly report:** A button to access more detailed weekly market data.
- Today's WEP trade activity:** A table showing recent trade transactions.
- View current market offers/bids:** A button to view active market offers and bids.

This screen is the homepage reference point for users. The home page/gallery acts as a launching pad to further functionality of the WEP.

AWEX generic market information.

AWEX market commentary.

Click through to view further market information.

This table details recent trade activity on the WEP. Users can identify at what level the market is trading at.

Users can click through to view the market screen which details current bids and offers active in the market and provides extensive searching functionality to view specific requirements.

1.2 – E) WEP market screen

This screen details how any users would view the active WEP market place. Any user whether it be seller or buyer can use this screen to view both sides of the market. The screen details all active bids and offers in the market at any given point in time. The searching functionality would allow users to filter the relevant bids/offers being shown to greater suit their requirements.

From a buyer perspective: A buyer can view where competitors are bidding relative to their own bids as well as viewing where sellers are pricing their wool. Actionables available to the buyer from this screen would include placing a bid against an offer, editing a bid, removing their bid etc.

From a seller perspective: A seller can view where others are pricing their wool to sell as well as viewing at what price level buyers are buying and how far away this is from where they have priced their wool. Actionables from this screen would include creating an offer to match a bid, editing an offer, cancelling an offer etc.

The screenshot shows the WEP Market Screen interface. At the top, there is a navigation bar with the WEP logo, a 'View Market' button, and a 'Login' button. Below this is a blue header with the title 'WEP Market Screen' and a user profile icon. The main content area includes a search instruction: 'Search the specifications you want to view active bids and offers matching the criteria you have selected in the WEP.' Below this is a 'Filter search' section with three filters: 'Delivery Location' (set to 'All'), 'Micron' (with 'MIN' set to 17 and 'MAX' set to 22), and 'Types' (set to 'Fleece'). There is an 'Update' button with a magnifying glass icon and an 'Add more' link. Below the filters is a section titled 'Applicable lots' containing a table of bids and offers. The table is divided into two columns: 'Bids' and 'Offers'. Each column has three sub-columns: 'Micron', 'Volume', and 'Price c/kg (greasy)'. The table lists 16 rows of data for both bids and offers, sorted by price from highest to lowest. Callouts point to the user profile icon, the filter search section, and the table.

All user types can view this screen. It details the 'current market' through displaying all active bids and offer currently in the market.

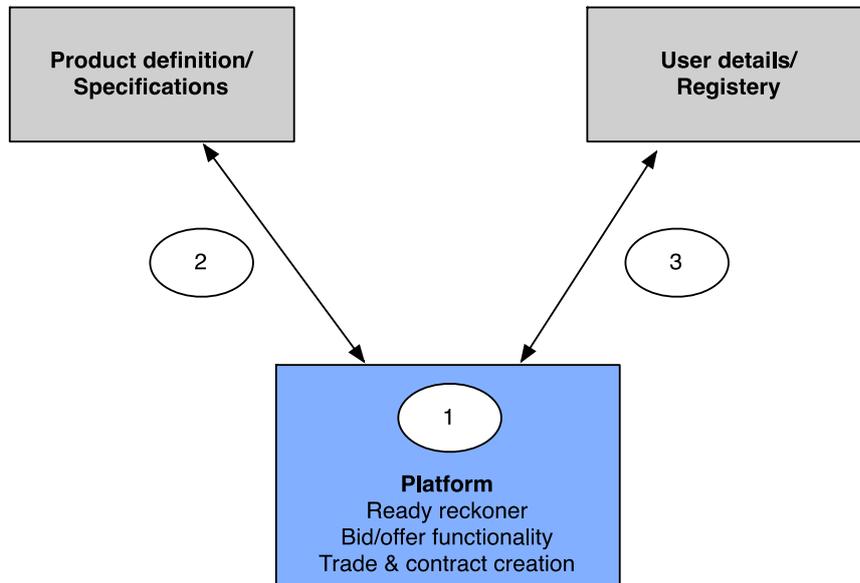
The filter functionality allows users to view market depth that is more relevant their requirements.

The table pictured displays the bids and offers within the search parameters entered by the user. The bids/offers are in order of of best priced bid and best priced offer.

Bids			Offers		
Micron	Volume	Price c/kg (greasy)	Micron	Volume	Price c/kg (greasy)
21.2	100	782	20.9	76	784
21	123	780.3	20.7	99	784.91
19.6	54	778.6	19.3	30	785.82
19.2	2	776.9	18.9	45	786.73
21.1	156	775.2	20.8	132	787.64
20.2	22	773.5	19.9	3	788.55
20.1	4	771.8	19.8	56	789.46
19	45	770.1	18.7	21	790.37
21	40	768.4	20.7	16	791.28
20.2	120	766.7	19.9	96	792.19
19.7	10	765	19.4	53	793.1
21.5	2	763.3	21.2	21	794.01
19.2	50	761.6	18.9	26	794.92

Section 2. Setup and Costing

This is the body or organisation that determines and guarantees product specifications (AWTA etc)



Reference point 1 (above diagram) – The WEP (Exchange), this is the extent that is included within the below estimate.

Reference point 2 & 3 (above diagram) – These are integrations with third parties that may require to be undertaken for an effective exchange to be built. The estimates outlined below do not include building “integration” links to the industry’s product description standards (e.g., AWTA) or a registry of users (buyers/sellers). However these are seen as importing and harmonising tasks, not fundamental to the construction of the WEP as an exchange. Once NZX could inspect the structure of the data in these linkages, more accurate estimates can be prepared.

It is highly important to have a defined outcome prior to any build to avoid major discrepancies between estimated setup times and final project time. The possible scope for the proposed WEP is extensive; hence it is important to have clear guidelines and expectations. The set-up and costing provided is based on the assumptions below as determined by NZX with the information made available.

Assumptions:

- Product development is for the minimal viable product in each category.
- Requires onsite access to an external project team member with the appropriate wool product knowledge.

- Estimates do not include and may vary depending on ongoing operation/maintenance contracts or any further innovation/development.
- Estimates do not account for any third party data integrations (AWTA, Talman etc).
- Estimates are based on the assumption that a register within the Australian wool industry exists and integration to access this data can be made.
- Estimates do not include integration with third party database for access to user details.

Ready Reckoner/Price Discovery

2-3 months elapsed time; circa \$250-450,000 depending on job refinement and arrangements post development such as on-going operating contracts and retention of intellectual property.

Referenced in section 1.

The 'ready reckoner' is a proposed tool that would allow the grower to identify the different avenues to market through true price discovery. The tool would display all effective avenues to sell a nominated lot of wool and illustrate the highest available price at the farm gate (ie net of all costs).

This price discovery tool would provide the grower with the market transparency to pursue the method of sale which best suits their individual circumstances and identifies the greatest potential returns.

The estimated minimal viable product would entail the following:

- Basic search functionality.
- Display outlining different avenues to market.
- Basic calculations to determine most price effective route to market.

Additional functionality could include the following:

- Detailed charting functionality.
- Access to market information.
- Integration with required trading avenues.

Connectivity Platform

3-4 months elapsed time; \$450-800,000 depending on job refinement and arrangements post development such as on-going operating contracts and retention of intellectual property.

This is the online system allowing the transaction of wool to take place and associated logic that is required. The estimate is for the most basic structure in which would allow this to occur.

Including:

- User accounts (differentiating between different users including a broker, producer and buyer/exporter).
- Singular bid (Functionality to place one bid at a time).
- Singular offer (Functionality to place one offer at a time).
- Admin functionality for the party operating and maintaining the WEP.



- Market screen displaying bids, offers and recent trades.
- Trading engine and associated logic (functionality allowing bids and offers of the same description and price to match).
- Set trading hours.

The 'trading interface' represents the core platform that enables the trade of wool to take place. Further functionality and improvements can be made to the platform as required.

Interactive Homepage - Market data and decision support tools

1-2 month elapsed time; circa \$100-300,000 depending on job refinement and arrangements post development such as on-going operating contracts and retention of intellectual property.

Referenced in section 1.

The 'interactive homepage' will contain links to market data and decision support tools that would allow the grower to identify current market activity through a variety of sources. The tool would display up to date data, charting and analysis from both the WEP and external trade activity including AWEX etc in order to educate the producer and guide decision-making.

The interactive homepage would allow smooth transition to other features of the proposed WEP, acting as a hub for all services provided.

The estimated minimal viable product would entail the following:

- Basic market information.
- Navigation to other tools within WEP.
- Basic access to market data, including links with external data.

Additional functionality could include the following:

- Detailed charting functionality.
- Integration with required external data (AWEX etc).
- Integration with required third parties.

On-going Running Costs

On-going costs will depend on the resulting functionality of the WEP from development that needs to be scoped thoroughly. This includes labour units plus typical on-costs required to administer functions including the following:

- Data contribution from external sources – ie. is collection of data from current wool selling mechanisms automated or manual?
- General maintenance to ensure the integrity of the system in its current state – ie. maintaining business as usual.
- Hardware and software support – ie. servers, rackspace etc. which will depend on the quantum of data.
- Any new developments – ie. enhancements to improve use as requested by industry.

Section 3. Benefits and Challenges of online trade in Agriculture

Through the experience NZX has had in implementing and operating an online exchange for Australian grain as well as our involvement in a number of exchanges in New Zealand, we are well positioned to identify the benefits and the challenges for successfully implementing the proposed WEP.

Below we have detailed some of the benefits and the challenges we perceive may be faced in developing the WEP, based on our experiences from the implementation of an online model for grain trading.

NZX supports ongoing industry innovation across the Australian agricultural sector and we see the WSSR as a positive development for the Australian wool industry.

Benefits:

Improved price transparency:

An online model allows greater transparency on price to occur as each trade occurs at a 'common pricing point' as well as outlining any accompanying costs. The associated selling, transport and any other costs including levies etc. can be easily outlined to all relevant parties. An accurate breakdown of costings, fees and deductions ensures the seller is acutely aware of the net return they will receive before transacting. Hence ensuring there are no hidden costs following the sale, providing confidence in pricing and execution. Increased price transparency provides greater certainty in both the net return and costs to all relevant parties.

This level of price and cost transparency allows a seller to make an "apples with apples" comparison between several different market channels and ultimately choose the supply chain pathway which provides them the best farm gate return. When the market is not transparent, the seller may not know the bid price in alternate markets or have certainty of the costs which apply in each. This makes it difficult to assess the least-cost pathway to market.

Online trading functionality ultimately also provides greater transparency in the form of 'real time' market data. This arms market participants with a further layer of information in which they can use to their benefit when transacting. This includes but is not limited to real time trade data, firm bid pricing levels, firm offer pricing levels as well as the spread between the two. Hence providing insight into the level of appetite, the volume of product being bid and offered and the associated price in which the product is trading at. The increased transparency educates market participants on the current market environment in which they aim to partake in.

Improved competitive tension:

By lowering barriers of entry for new buyers and sellers to enter the market an online trading platform has the potential to increase participation and result in stronger competition.

In our experience with the Clear Grain Exchange we have seen market participants range from large scale exporters, international trading houses all the way to local end users. A number of these



participants had previously dealt with an intermediary or fellow participant of the trade to purchase their requirements, however now have the ability to purchase direct from the producer through the online platform provided.

Allowing buyers to access growers directly, drawing volumes away from traditional pathways creates competitive tensions as existing buyers compete to maintain market share whilst new buyers benefit from direct grower access often resulting in increased returns to growers.

The ease in which buyers can participate without necessarily having the individual relationship with the producer, being physically present at an auction, or having an established reputation within the market opens the door to further participants.

The increase in the number of buyers has created further competition for the product being offered. In the case of wool one example is that it may allow buyers who had previously been restricted by the requirement to be physically present at auction, to now participate.

Transaction automation

By automatically completing administrative processes upon completion of the trade, an online exchange can automate transactions reducing the risk of error and creating efficiencies for all market participants.

As highlighted in section 1.1, when a physical trade is completed on the Clear Grain Exchange, trade notifications are sent to the participating parties, contracts are automatically generated. This saves time for all parties but also mitigates the risk of errors in the contract due to oversight or time pressure. Many broking businesses feel contract paperwork is one of the key administrative tasks holding their business back from growth. Automating these tasks allows such businesses to flourish.

When payments are distributed costs and levies are automatically distributed to the associated parties. This means the money received by the grower is their “in pocket” amount – aside from taxes no further deductions apply to this payment. This reduces the administrative burden on the buyer and seller when compared to transactions where levies and other charges are taken care of as separate individual transactions. For the recipients of these levies and payments, they also have certainty their fees will be recovered at the time of the transaction.

Increased efficiencies

In an efficient market, all industry participants have equal access to information. This allows for informed perception of value across all industry participants. One way a WEP would achieve a more symmetrical flow of information is by bid, offer and trade volumes and values publicly available to all participants. In the current wool selling system, buyers can see the line-up of offer volumes in any given week, and for several weeks following, however sellers do not have transparent insight into buyer appetite. By publicly listing the bid and offer boards, both buyers and sellers can make informed decisions about the level of buyer and seller appetite at different price levels.

An online WEP can also reduce the overall cost of accumulating wool. One example of this is by removing the need for buyers to be physically present at auction rooms. However other benefits such as transaction automation also help to reduce the administrative burden of purchasing wool.



Furthermore, as addressed previously, if improved price and cost transparency is achieved sellers have a better understanding of the in pocket return of selling via different avenues. This allows sellers to direct their product towards the least cost pathway to market. One example of this in the grain industry is where grain destined for domestic markets is often stored in on farm storage to allow for flexible logistics to the end user, whilst grain destined for export is often placed in bulk handling systems to capture the efficiencies of bulk grain transport to port. By knowing the price and costs associated with each market growers can pro-actively make the best decision based on the quality of their product, the price and costs associated with different selling channels.

This ultimately leads to supply chain investment as different sectors of the industry compete for market share.

Pricing autonomy

Price autonomy refers to the process whereby a wool producer could choose the price they want or need for their product and then offer it to the market. This allows them to autonomously set a price in the market without having to wait for the market to be at their desired price level.

By having a sell order in the market the seller tends to capture opportunities that they may otherwise have missed.

This “offer” driven market provides greater insight to buyers of what price they may need to bid in order to accumulate volume as they can see offer volumes at each price level for each quality specification.

Challenges:

Initial market take-up

Liquidity is critical to achieving an efficient marketplace. Hence one of the biggest challenges when implementing a new selling system is getting the market to use it. Both buyers and sellers need to be engaged with the platform in order for the liquidity to build.

Without market engagement there is little incentive for buyers or sellers to return to the platform to continue offering and bidding for product. Hence, whilst it may take some time to achieve market saturation a critical mass is required in order to establish a new transaction alternative.

As highlighted in the introduction, to manage this risk, most exchanges start from a “mutual” ownership structure of participants whereby the parties who stand to benefit the most from the proposed structure also own the system. It is NZX’s view that the most logical owners of any WEP are the growers themselves. They are also the key stakeholders that will need to be involved to make the WEP a success. NZX’s experience with Clear Grain Exchange is that buyers will use an exchange mechanism if offer volumes exist. Hence grower led behavioural change has more chance of success and a common way to get the alignment is through ownership.

Education

From NZX’s experience with the Clear Grain Exchange, education needs to take place in two steps.





The first step is the “why” – showing market participants why they should engage with the WEP. This is achieved by effectively communicating the benefits of the platform in order to encourage utilisation. If the market doesn’t understand how to use the system to their advantage, there is little incentive for behavioural change. This is true for all market participants; hence the education campaign around such a change needs to be comprehensive and targeted to the specific uses of each market segment.

The next step is the “how” – which takes new users through the detail of completing a transaction on the platform. This step is particularly important to provide users the confidence to transact. Communicating the “how” has its own challenges at different levels of the supply chain. However assuming industry buy in has been achieved, leveraging those with strong relationships with the users of the platform is a successful means of educating the larger overall group. I.e. Engage brokers as educators of growers.

Industry buy-in

Whilst there is clear value in the WEP for the grower, there is also value for other industry participants. It is important that although we are proposing the platform be owned by the grower that all industry participants are engaged.

The WEP has the potential to be disruptive to the current flow of wool through the supply chain. Hence it is imperative no participants are put “offside” by the change, and that the WEP is not seen as competition to the key industry stakeholders required for the platform to work.

Benefit needs to be shown to buyers, brokers etc. The platform also needs to be designed with their usage patterns in mind in order to make it easy for them to engage with the WEP.

As previously highlighted, the buyers will engage if the offers exist. However if brokers own the grower relationships and the WEP is dependent upon brokers in order to educate growers on using the platform, their buy in will be critical to ensuring the growers bring their offers to the exchange.