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The Rise of Agri Ecommerce
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Executive Summary

E-commerce is a fast-developing sales channel, on which the agricultural sector was a long way behind. This project looks at the growth/opportunities for e-commerce operations for agricultural supplies businesses. The willingness of farmers to use online stores to make farm input purchases is now very high (83.5% in favour of using e-commerce), and now many Agri supplies businesses are ready to offer this to their customers.

Literature was examined to understand key aspects of e-commerce, and key businesses were identified and interviewed to gain insight on e-commerce in agriculture. From the interviews, themes were identified and analysed to answer the study questions. In addition, a farmer survey was run to get the farmers' thoughts on the use of e-commerce.

The key learnings of this project were:

- There are still some real issues with rural internet connectivity. Although rural internet access is high, the quality of the internet is very poor (speed) making it difficult for some farmers to operate with Ecommerce.
- Agriculture supplies businesses were able to respond quickly with e-commerce options during lockdowns, which helped them maintain turnover.
- The pandemic accelerated ecommerce activity within the agricultural sector.
- The presence of an online store helps existing “bricks and mortar” businesses to better serve its customers (omnichannel).
- Some positive environmental outcomes resulted from increased e-commerce retail (reduced greenhouse gas emissions and less physical retail space required)
- The willingness of farmers to use e-commerce options when purchasing farm inputs has increased. COVID 19 was a major driver of this, as well as some of the benefits (convenience, time saving) that it can provide.

The recommendations from this project are that -

Agricultural Supply Businesses:

- Prioritise physical and online store (omnichannel) offering. Ensure farmers receive connected human and digital interactions.
- Measure and monitor customer experience metrics to ensure their online sale platforms are performing and fit for use.
- Follow Agri e-commerce developments overseas to apply potential opportunities for New Zealand.
- Attract farmers with development of clever marketing and advertising ideas, especially to grow and maintain customers.

Farmers

- Explore e-commerce options, as online stores offer a much better service than they did a year ago, let alone five years ago.

Introduction

E-commerce is the buying and selling of good or services via the internet, and the transfer of money and data to complete the sales. It's also known as electronic commerce or internet commerce (Zande, 2020). The convenience of this form of buying and selling has grown very popular, and we are now surrounded by e-commerce, where it performs an important function in the lives of most people.

The last two decades have seen significant growth in e-commerce. The global e-commerce market is expected to total \$4.89 trillion in 2021. Two years ago, only 13.6% of sales were made from online purchases. Today, that number is expected to reach 19.5% in 2021, a 45.8% increase in e-commerce market share over two years. Growth is expected to continue, reaching 21.8% by 2024 (Keenan, 2021). In 2020 New Zealand saw 11% of all retail sales come via online channels, which totalled \$5.8 billion (New Zealand Post, 2021), although this figure is a long way behind other countries (UK and US, 20%+), it provides New Zealand with some great opportunities going forward.

In this report we will look at the place of e-commerce in agriculture for farm inputs. The agriculture sector is a long way behind on the e-commerce journey compared to other sectors, however looking at how important New Zealand's Primary Industries are to the economy (7% of our GDP, with an annual value of \$17 billion (Agriculture, forestry and fishing producing around 80% of the sector's output and mining the remaining 20%)) (GDP Live, 2021), there are some great opportunities available for Agri businesses in this space.

The information for this report is collected from e-commerce literature sources, along with insight from people and businesses who are heavily involved in Agri e-commerce (via interviews), and insight from farmers (via survey).

There are several types of e-commerce that have been identified. The first three (B2B, B2C and C2C) are most relevant to this research:

- Business-to-business (B2B) e-commerce relates to a commercial activity between businesses, such as transactions that may take place between a retailer and a wholesaler.
- Business-to-consumer or business-to-customer (B2C) e-commerce describes the conduct of a business serving the end consumer with a product and/or service. Online banking and online retail are examples of this type of e-commerce.
- Consumer-to-consumer (C2C) e-commerce is commercial activity that involves transactions between consumers facilitated by a third party such as online auctions where one consumer sells, the other bids and the third party charges a fee for facilitating the sale.
- Consumer-to-business (C2B) e-commerce is a model where individual consumers are paid by companies for offering goods and services to companies, they themselves buy from.

(Ralarala, 2020)

Aims & Objectives

The aims of this project are to:

- Examine the place of e-commerce in Agriculture, for farm inputs & the opportunities available.
- Learn, from literature & other sources, about the different types of e-commerce options available & what these mean.
- Understand the thoughts from the consumer on the matter and the pros & cons that they might have to e-commerce.

The objectives of this project are to:

- Review some of the current Agri Input e-commerce available, to identify their success and learnings.
- Assess the willingness of Agri customers to use e-commerce.
- Further promote ecommerce and its opportunities to both business and consumer.

Literature review

This literature review was carried out to provide context on Agri e-commerce, the challenges that it poses, which forces drive it, and which aspects make it successful for both the business and customer. The review focuses on a range of aspects of e-commerce (influences, types, customers, environment). Most of the information sources were global, with the information being able to be applied to a New Zealand context.

Internet Access

Successful Agri e-commerce needs infrastructure to support it. Good internet access can offer many opportunities to those living in remote areas, as well as assist in the growth of e-commerce practices in agriculture.

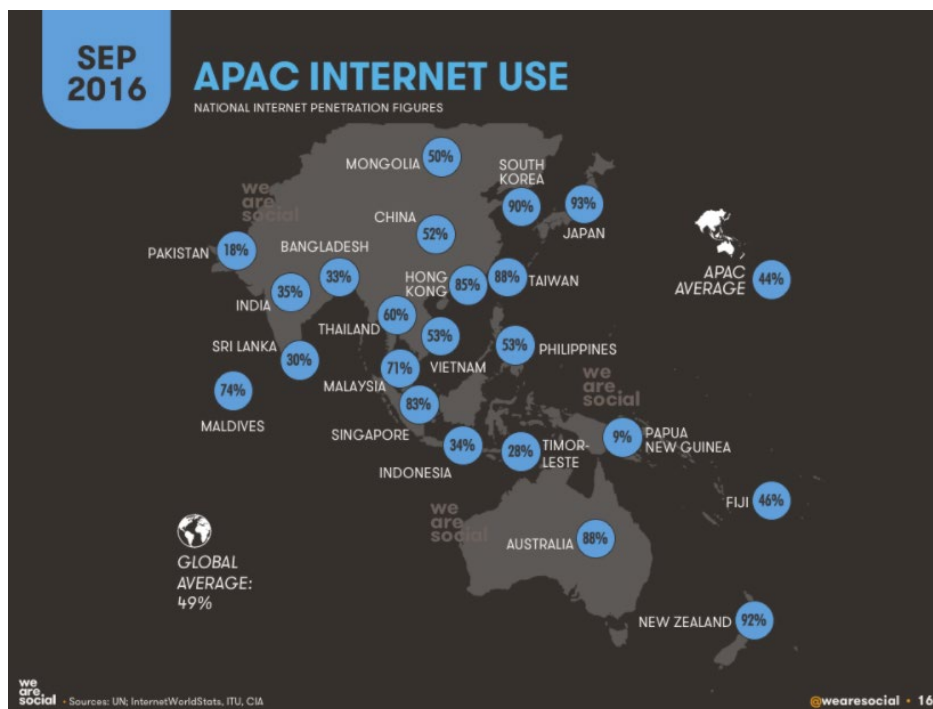


Figure 1. National Internet Penetration Figures

(KEMP, 2016)

Looking at *Figure 1.* above, as a country we have great access to internet, with our internet use (based on National Internet Penetration Figures) sitting at 92%, compared to the Global Average of only 49%.

This high level of internet access also occurs in agriculture, with 97.72% of farms internet connected, a 1-2% increase from 2019. Wireless broadband is the main type of internet connection, with nearly 50% of farms using it. However, the quality and reliability of the connection was a prominent issue emerging from this survey (Federated Farmers of New Zealand, 2020). Although the level of connection to farm is good, the download speed of the internet is still concerning, with around 70% of survey respondents indicating their average download speed is between 0-20Mbps (Federated Farmers of New Zealand, 2020). This adversely affects what farm businesses can do via the internet and often forces them to do these tasks late at night or early in the morning, when the speed is at its best and connection is most reliable.

To improve internet access in rural New Zealand, The Rural Connectivity Group (RCG) was appointed by the government in August 2017, to be the infrastructure provider to bring 4G wireless broadband and 3G mobile services. They will build 520 new cell sites in remote locations, which once complete will increase our total mobile coverage area by as much as 25%. RCG believes everyone in rural New Zealand deserves better broadband and mobile coverage to keep up with the demands placed upon them in the new digital world (Rural Connectivity Group (RCG), 2021).

The internet access across New Zealand (including rural areas) is high, however the quality in rural areas is not great. Rural areas experience download speed between 0-20Mbps (compared to >100Mbps for urban). This makes it slow and cumbersome for farmers to access ecommerce sites, furthermore purchasing for their business and using cloud applications that are important to the running of their businesses. The need for improved rural internet access is high and from conversations with friends in rural areas, the current work being completed hasn't been very effective. Many have investigated other options (satellite internet) which is showing strong improvement and great feedback. With the enhancements in infrastructure and satellite options, rural internet access appears to be heading in the right direction, making way for increased use of ecommerce purchasing within rural households.

COVID-19

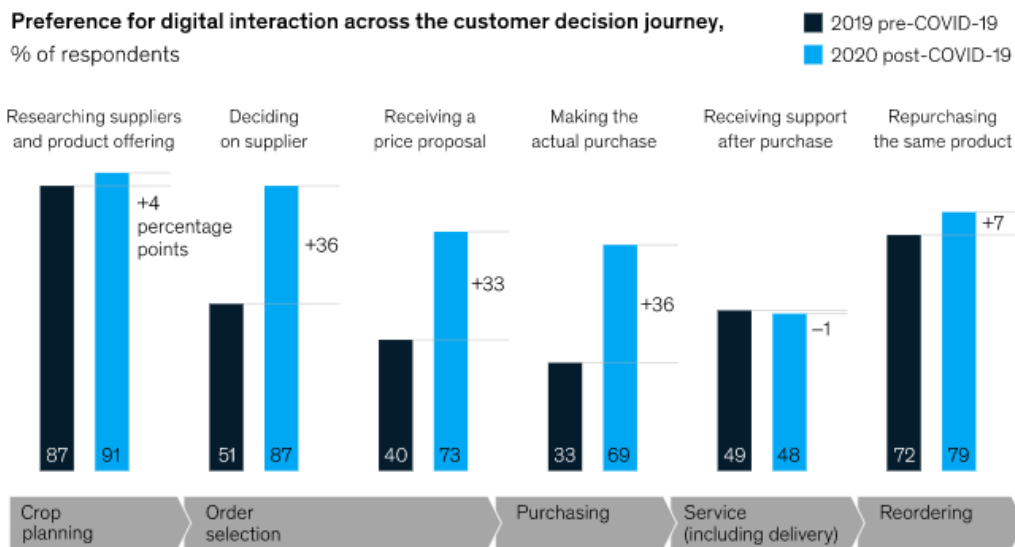
2020 was the year online shopping stepped on the accelerator, with COVID-19, and more specifically lockdowns, really changing the shopping landscape in a major way. Lockdowns saw those already online spend more, more often, and across more sectors, and those who hadn't tried online shopping before discovered its ease and convenience (New Zealand Post, 2021).

The COVID-19 pandemic was a "ready or not, here I come" moment for retailers and their grower/farmer customers (Pucci, 2020). This was the case for a lot of the Ag retailers in NZ. Farmlands, for example, who had been working in the e-commerce space before the pandemic, but not at a level to successfully manage the complexities posed by the pandemic. A click and collect ordering platform was quickly established to help manage the 2020 lockdown, but a more suitable platform has since been developed (Online Shop), which has allowed them to manage the Delta lockdown more effectively.

One of the biggest challenges for Agriculture e-commerce businesses has been the reluctance of customers to change their purchasing habits, but the COVID-19 pandemic seems to have eased this challenge. The pandemic has resulted in a boost to online shopping, with people turning to e-commerce platforms out of necessity, and because of safety concerns regarding physical stores. As another plus, these businesses are looking to retain their new customers by developing consumer trust, ensuring seamless and hassle-free online experiences, and delivering on their promise of quality products (Mustafa, 2020).

Figure 2. below shows the willingness of agricultural customers in Europe to use digital options at various stages through the process of purchasing a farm input product.

Due to COVID-19, the willingness to go digital seems to have grown substantially.



Source: McKinsey Agriculture Digital Customer Decision Journey Survey, May 2020, Europe (n=100).



Figure 2. Preference for digital interaction across the customer decision journey, pre & post COVID 19

(Jillian Ardrey, 2020)

In terms of operations; Agriculture has been one of the least affected industries as a result of COVID-19. This is due to the isolated nature of the industry and legal exemptions (as food production) against restrictions. Agricultural businesses rely heavily on their suppliers for continued operations and many Agri supply businesses were not prepared with an ecommerce offering to assist their customers. Rapid development of ecommerce platforms ensued and growth in ecommerce offerings to farmers exploded. We saw ecommerce-ready businesses prior to COVID-19 experience great growth during the first lockdown and have continued momentum to develop their platforms further as new competition entered the market. If you add the increased development of Agri ecommerce with the farmers increased willingness to use ecommerce, COVID-19 has been a great outcome for Agri Ecommerce.

E-commerce Models

One e-commerce model used by farmers/growers for their inputs for some time now is the consumer-to-consumer (C2C) model. In New Zealand this type of e-commerce has been facilitated by Trademe, a marketplace where farmers can buy products from one another, with Trademe charging a fee for facilitating the transaction.

In recent years some online marketplaces have been developed specifically for procuring farm inputs. One to note is a USA-based business called Agrellus, which describes itself as an “online marketplace that brings together buyers and sellers of agricultural inputs and commodities” (Agrellus , 2021). This type of business was initially met with resistance from retailers, but now Agrellus is inundated with retail requests, which the pandemic has certainly assisted with. Along with the convenience that the Agrellus marketplace offers its users, it can also offer significant savings, which come via dealer competition for the available business (Gullickson, 2020).

B2B e-commerce is anticipated to be the area of largest e-commerce growth from 2020 to 2025 (Hyder, 2020). This has been driven by B2C experiences, where consumers have conveniently purchased goods online and desire to have the same experience when making purchases at work.

Omnichannel retail allows all members of the ag supply chain to shop and network from mobile devices, computers and even in brick-and-mortar stores (Proagrica, 2021). Across the US, ag retailers are reporting negative impacts to their profit margins due to increased competition from online ag retail start-ups. E-commerce sites now provide farmers and ag retail customers with multiple sources of product price information, allowing them to leverage that information in negotiations with more traditional retailers. This competition has pushed ag retailers to add online options to keep up with shifts in the industry, and better serve their customers (Proagrica, 2021). New Zealand ag retailers have not yet had the same pressure from online ag retail start-ups, but many have seen the need to offer further options to better serve their customers and have developed online stores to offer an omnichannel approach, which has served them well in recent times with the COVID-19 lockdowns. The omnichannel option of buying online and then being able to pick up in store is serving our ag retailers well, giving them more time to work out some of the supply chain complexities associated with online stores.

In most instances the Agri supply business is crucial to farm operations. Furthermore the farmer heavily relies on the advice provided by the sales representatives of these businesses. Agri ecommerce has come with huge benefits to farmers, however it is unable to replicate the key human interactions that Agri supply businesses are well known for, hence why the application of an Omnichannel ecommerce model is critical for the Agri sector. Farmers can get a mix of digital and human interactions and now have the choice on how they operate with their supplier on a regular basis. The New Zealand Agri supplies industry is well positioned to operate as omnichannel: connecting established bricks-and-mortar stores, mobile staff and online stores means farmers receive the best possible customer experience.

Customer Experience

Customer experience is the impression your customers have of your brand throughout all aspects of their buying journey. A positive customer experience is critical to the sustained growth of any business. A positive customer experience promotes loyalty, helps the business retain customers, and encourages brand advocacy (Bordeaux, 2021).

In ag retail, the physical store plays an important role digitising the customer experience. We know that farmers want a mix of human and digital interactions throughout the buyer relationship. The store is more important than ever for creating seamless and connected omnichannel experiences across all physical and digital touchpoints. Ag retailers will gain most from an omnichannel – not digital-first – mindset (Brown, 2021).

Here's how to make your store play a bigger role in your omnichannel strategy.

- 1. Enhance the in-store experience**

Re-imagine the customer in-store experience to become the place that farmers want, rather than need, to go to.

- 2. Blend in-store and digital for consistent experiences**

Farmers want omnichannel experiences tailored to each stage of their purchasing journey. They want reps to provide product information, expertise, and value. And they want the e-commerce store to provide sharp prices, easy ordering, and fulfilment.

- 3. Personalise customer offers and experiences**

Businesses have an opportunity to build enduring and trusted relationships with farmers by creating solutions that are local, personalised, and responsive to their specific needs.

(Brown, 2021)

Preference for digital interaction peaks at the initial-research and repurchase phases of the CDJ but is important throughout.

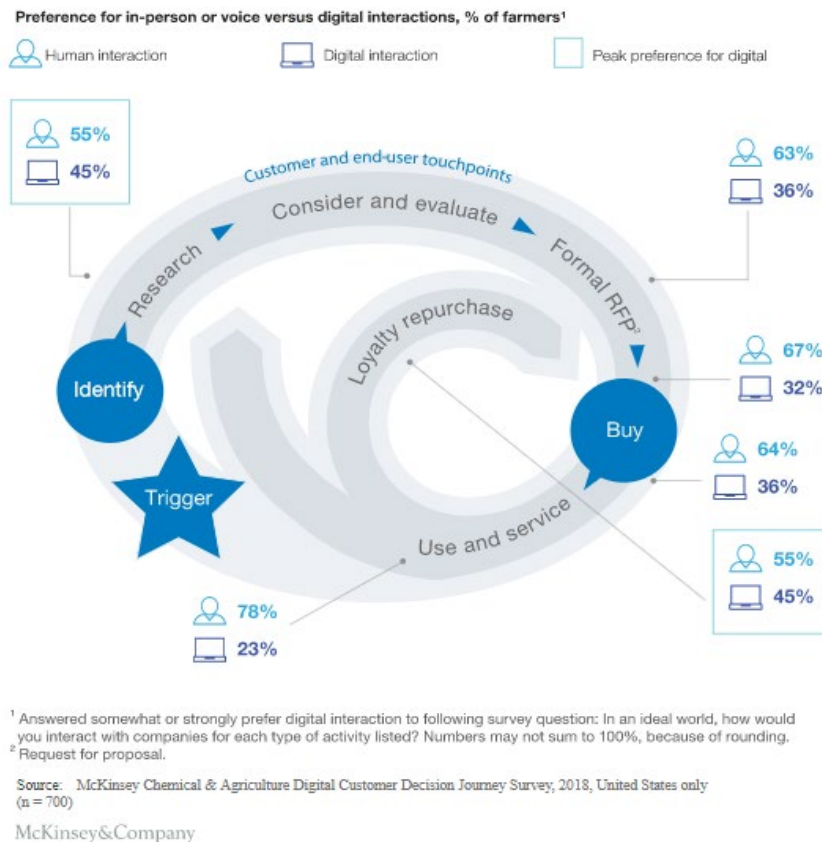


Figure 3. Human & Digital interaction statistic during the Customer decision journey of farmers (David Fiocco, 2019).

Figure 3. above reiterates the importance of the omnichannel strategy. In store and digital sources of information are both vital to farmers during the Customer Decision Journey (CDJ), with digital sources being particularly important during research and the repurchase part of the journey (David Fiocco, 2019).

A positive customer experience is crucial to the success of your business because a happy customer is one who is likely to become a loyal customer who can help you boost revenue. For the Agri sector which is still dominated by physical retail stores, creating a seamless transition from their online to physical store offering is extremely important to how they are going to be viewed by their customers. With the growing use of Agri Ecommerce and the farmers need for some human interaction from their supplier, this omnichannel experience is something that Agri suppliers need to grasp early or risk being left behind.

Environment

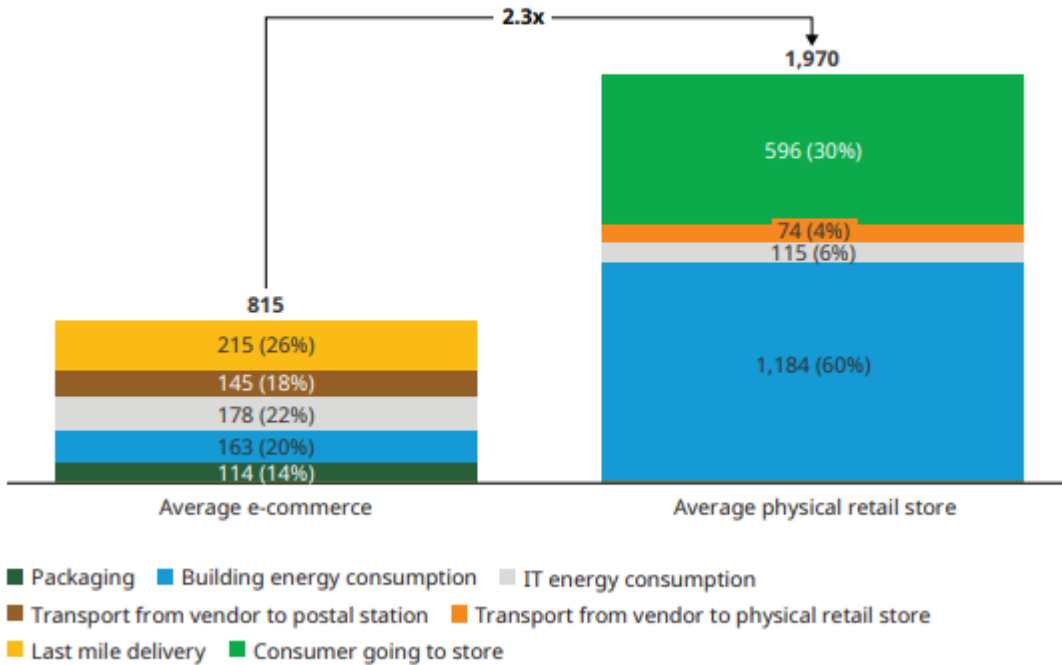
After two decades of double-digit growth, what impact is e-commerce having on the retail industry and the wider environment? This question is particularly important after 2020, a year dominated by the COVID-19 crisis, as e-commerce played a critical role while many stores were closed.

The environmental impact of e-commerce appears to be positive. In a European study, offline shopping results in between 1.5 and 2.9 times more greenhouse gas emissions than online shopping. Land use for e-

commerce is lower than for physical retail, when logistics, selling space, and related parking space are included.

Exhibit 2: CO₂e impact of a product purchased through different sale channels in Europe (Average case)

In grams of CO₂ equivalent emissions for an average non-food product



Source: Oliver Wyman analysis

Figure 4. CO₂ emissions impact when products are purchased via e-commerce & physical stores.

Consumers’ behaviour can directly influence the emissions impact of their shopping, both online and offline. Compared to the average case, consumers of non-food products can reduce their CO₂e impact by up to 46 percent when buying online, and by up to 30 percent when buying offline in the following ways:

- Prioritizing walking to nearby physical stores or ordering online rather than driving to stores.
- Grouping their purchases and returning fewer of them (both online and offline).
- When ordering online, favouring online retailers with national mass-storage facilities to avoid long-distance air freight.

(Oliver Wyman, 2021)

The environment is now an important metric for consumers when making purchasing decisions, and the calls for sustainability and traceability within agriculture have never been stronger. All agribusinesses must now put safe, sustainable practices at the forefront and demonstrate their commitment to environmental responsibility. Based on the above sources of literature, the growth of Agri Ecommerce offerings supports an agribusinesses commitment to a sustainable environment.

Methods

The inspiration for this project came from my current employment with Leader Products International Ltd, a manufacturer and supplier of Livestock Identification devices (ear tags), which is part of the NAIT (National Animal Identification & Tracing) scheme. As one of the smaller tag companies in the market, we had to look at new ways to extend our appeal to the end user (farmer), which came in the form of an online ordering platform. As we began our journey as an e-commerce business, I wanted to gain more insight on e-commerce so that we can attract and better serve our customers.

The literature review has started to get an understanding of e-commerce and what is currently happening with e-commerce in the Agri sector.

To further understand Agri e-commerce and its growth/opportunities, along with the customer (farmer) willingness to accept this channel to purchase farm inputs, I have interviewed businesses operating in Agri e-commerce and surveyed New Zealand farmers around their experience with Agri e-commerce.

Interview

Interviews were carried out to gather information and gain insight from businesses who currently operate in Agri e-commerce. The interviews took place in a semi-structured format, to allow for conversation outside of the set questions. The questions set can be viewed in Appendix 1. Interviewees were contacted and an interview time booked, with questions and a consent form (Appendix 2) shared in preparation. The consent form was used to gain the interviewees' permission and to advise them how the information would be handled during and after project completion (Chatham House Rules applied). Interview recording never took place and all interviewees were happy to answer further questions if they arose.

Interviewees

Interviewees were chosen from the knowledge that the author had on the sector, and who they thought could best provide insight on the growth/opportunities of Agri e-commerce. Four interviews took place with Ag Retail businesses which operate differently in the Ag Retail space (physical store with an online store – omnichannel – and online store only). The author also interviewed two Agri businesses who, instead of having their own website store, used a marketplace platform to generate further business, which provided a different look at Agri e-commerce opportunities. These interviews were arranged into three groups – Omnichannel, Online and Marketplace.

Survey

A survey was developed to gather data from New Zealand's farmers, to understand their experiences with e-commerce and whether this was an effective channel for them to purchase farm input products. These survey questions can be viewed in Appendix 3. The surveys Farmer Response made up the fourth group to discuss.

Analysis

Interview and survey responses were analysed by identifying the overarching themes. Data was numbered to group ideas within these themes. Mind maps were produced for each group, themes formed the main branches and ideas were the leaves off these. Often there were several similar responses between interviews, which made identifying themes easy.

This method of analysis was chosen as it allowed for easy analysis of the interview and survey data to identify themes and ideas.

Results

Omnichannel themes

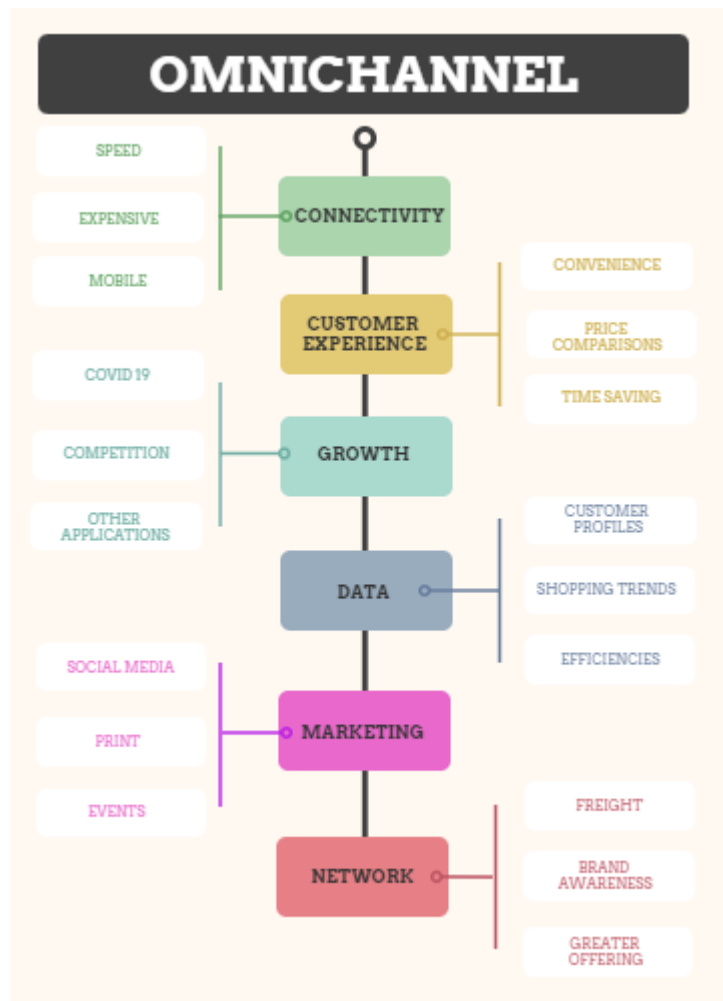


Figure 5. Mind Map of Omnichannel themes & ideas

1. Connectivity

1.1 Internet Speed

Although there is a lot of work going on to improve internet connection in rural areas, internet speed is still a real issue. The interviewees noted that slow internet makes it difficult to purchase via e-commerce, which has a negative impact on their overall experience.

Current mobile broadband option (3G/4G) download speed is 10-30mbps, with upload speed of 2mbps. New options are now starting to become available, for example Elon Musk's Starlink (Satellite), with download speed 130-150mbps and upload speed 30mbps, However, this is still a little unproven.

1.2 Expensive

To add to users' internet speed worries, if they exceed monthly data allowances and need to purchase more data, this is done at an inflated rate. So, the need to monitor usage and adjust plans is important.

There are other options available to solve internet speed issues, however these can come at a cost. Gravity Internets satellite option has an installation fee valued at over \$2,000 (Internet, 2020).

1.3 Mobile

Mobile devices are an integral part of most agricultural operations these days, with many applications being used to help in the running of the business. With the high use of mobile devices (smart phones and tablets), most users are comfortable completing most of their online tasks via their phones, including making online purchases. The interviewees noted the importance of businesses developing their e-commerce platforms to improve functionality on mobile devices.

Now, with more than half of all internet traffic shopping conducted using a mobile device, it is extremely important to make sure businesses' websites are primed for mobile viewing (Smith, 2021).

2. Customer Experience

2.1 Convenience

When asking interviewees what has driven them to implement e-commerce, their first response was customer convenience. The convenience offered via e-commerce allows the customer to shop when they want without having to go anywhere. They acknowledge that there is significant work required in order to create a great customer experience.

2.2 Price Comparisons

The e-commerce option allows customers to search products they might wish to purchase, often with multiple offers available to allow the customer to quickly compare prices and other purchasing criteria (freight, delivery time etc), before choosing who they will purchase the required product from. The interviewees ranked the ability of price comparisons highly, indicating its importance in providing a great experience for the customer.

2.3 Time saving

Agricultural customers often live long distances from their farm retail stores, so the process of purchasing farm inputs can be time consuming. Purchasing these products online saves the customer valuable time and allows them to focus on more important matters.

The purchasing of a new product via e-commerce can be a difficult decision, as customers don't have the ability to easily ask the retailer technical or other questions. However, once customers are familiar with the products, having the ability to make repeat purchases online saves considerable time. The interviewees spoke about making repeat purchases via their online stores, saving them time and providing a great purchasing experience.

3. Growth

3.1 COVID 19

The phrase 'everything has a silver lining' comes to mind, when thinking about COVID 19 and its influence on e-commerce. The interviewees spoke about the impact that COVID 19 has had on their business and particularly on their e-commerce business. One spoke about how their e-commerce business exploded, another about how development was fast tracked to provide e-commerce options to their customers, and they all spoke about the importance of e-commerce options to their businesses with the uncertainties of COVID 19 still looming.

3.2 Competition

Competition among agricultural retailers has never been higher. The interviewees spoke about how the development of competitors' online stores had been a driver to develop and improve their own online stores, with focus on key areas such as product offering and customer experience.

3.3 Other Application

To help with the running of the farm business, farmers are now using multiple different web-based applications, and the amount of time spent using these applications helps them more easily access online stores to make farm input purchases. The interviewees spoke about how their broader web-based experience has been a significant factor pulling them to use online stores.

4. Data

4.1 Customer Profiles

The interviewees advised that it was still too early in their e-commerce journeys to profile their customers, based on their different characteristics for e-commerce alone. However, one interviewee spoke about the different groups of customers that exist across their business, with different preferences in how they transact with the business.

- Old generation – brick and mortar-focussed, with strong relationships with people in store. You won't see these guys purchasing farm inputs online.
- 2nd Generation/Gen X – these customers are IT competent and willing to try shopping online, however they also value the personal aspect when making a transaction in store.
- Corporate farmer and millennial – very IT competent, well researched, and constantly looking for ways to improve efficiencies. They have a high focus on e-commerce options if available.
- Lifestyle/urban – highly e-commerce-focussed. The products they are buying are easily transacted via e-commerce, with ease of shipping, etc.

4.2 Shopping Trends

Like customer profiles, the interviewees advised that it was still too early to confidently speak about customers' specific online shopping trends. Currently online shopping times throughout the year differ based on farm type and season, with the most popular time to shop being in the evenings (6-9pm).

As data is collected and shopping trends are developed, they will provide ideas on how to improve the online store and increase sales. For example, one interviewee spoke about whether they should promote products on a sales page or a clearance page.

4.3 Efficiencies

The use of data being collected from e-commerce can optimise the efficiency of retailers' businesses, through better managing inventory and making sure key product information is readily available. The interviewees spoke of the efficiencies that have been created across their whole business through the presence of their online store. There are new processes implemented by the business for their online store, that are being widely used in their offline store, creating great user experience and a more efficient operation.

5. Marketing

5.1 Social Media

Social media has become an influential and important virtual space, where the platform is used not only for social networking but also as a great way of digitally advertising businesses' brands and products (Henderson, 2020).

The interviewees spoke about how social media has been important to the success of their online stores, with the different platforms being used in different ways. For example, Facebook is being used for product ads and sharing stories/news, Instagram for creating a community of followers and engaging them to share photos etc, and Twitter as a platform to educate and raise issues. The content shared on each of these

platform's links heavily to the overall customer experience and therefore becomes a key part of the e-commerce business.

5.2 Print

Traditional print advertising is still the dominant form of advertising in the Agri-sector and the interviewees all spoke of this as being very important in the advertising for their online stores. Print advertising also caters for the traditional customer, less likely to use online channels – the type of customers online businesses want to attract and educate.

To provide some context on print advertising the Rural News Group has 70.9% of its readers (farmer survey) who will visit a website or call to find out more about a product or service after reading about it in the Rural News. These rural newspapers/magazines are considered most trustworthy compared to other media (Rural News Group, 2020).

5.3 Events

Ag retail in New Zealand has always been successful at holding events to promote their businesses, from small on farm/in store events to large regional or national field day events. The interviewees spoke about the importance of these events to connect with their customers, even more so as their business develops online.

6. Network

6.1 Freight

Putting an effective e-commerce shipping strategy in place is one of the most impactful steps businesses can take to grow their business online (Overton, 2019)

Free freight ranks very high in a customer's decision to purchase from an online store, and it is something that interviewees have implemented on their platforms for now at least. Another key comment from interviewees related to freight difficulties they experienced with large and hazardous products (common in agriculture), but the presence of a wide store network has assisted with this, enabling customers to pick these products up in store.

Omnichannel businesses are certainly best prepared to handle the freight difficulties posed by e-commerce.

6.2 Brand Awareness

The interviewees have found that since opening an online store they have developed a greater customer network. Their brand now reaches new locations it did not reach when they operated purely as a physical store network.

6.3 Greater Offering

The addition of an online store has allowed the interviewees' businesses to increase their offerings to their customers, via an increased product range and a better platform to help communicate information. This greater offering has further allowed them to extend their customer network, through increased availability and level of service.

The interviewees spoke strongly about the support of their great suppliers, with growth and development of their online stores to allow for the greater product offering and improved level of service to customers, and that they could not have done this without their strong network of suppliers.



Figure 6. Mind Map of Online Store themes & ideas

1. Development

1.1 Dedicated

The interviewees have developed their businesses as dedicated online stores, which is a model that is serving them well. Their websites are well equipped with the information required for customers to make informed decisions around purchasing their Agri inputs online.

1.2 Ease of use

The customer experience & ease of use of the interviewees websites has been one of the most important aspects of their business. If not, quite right this could be very damaging for their business and hence there is a lot of effort spent getting this aspect right, with revamps taking place every couple of years.

1.3 Pioneer

The interviewees have often been pioneers in their fields, in terms of achieving a strong online sales focus. Initially it was a difficult decision for them to operate in this way, as they were early adopters in the online agricultural retail space. However, this development has been a very successful one for their businesses.

2. Specialised

2.1 Knowledge

Initially, the interviewees' product offering was quite niche, which allowed them to become expert in their product field and to develop strong credibility with their customers. As time passed, they have been able to increase their offering and grow their businesses.

2.2 Time Saving

Another business focus of the interviewees has been to learn as much as they can about their customers, allowing them to make timely follow ups to their customers throughout the year. These prompt the customers to re-purchase, offering significant time savings, and feeding into a fantastic overall customer experience.

3. Growth

3.1 COVID 19

The pandemic has forced farmers to look at new ways to purchase the products needed to run their businesses. The interviewees spoke that the pandemic was the kick that the primary industries needed to look at online stores as reputable suppliers to their business.

The pandemic has certainly caused issues to the running of the interviewees businesses; however, it has been a shining star to the development of online stores in the agricultural sector.

3.2 Competition

The interviewees spoke about how the emergence of new competitors has been a real positive to their businesses. First, with more reputable suppliers more customers will be drawn to the idea of shopping online, and second, businesses are kept on their toes and making sure they keep ahead of their competitors.

3.3 Customer

Increased market competition has seen customers look for different/better solutions for their farm input purchases. The interviewees spoke of the wide range of customers that they serve, from large corporates & government to small independent farm businesses, which speaks highly of the business that they have developed.

4. Marketing

4.1 Advertising

The marketing of their businesses has never been more important for the interviewees, especially with increased competition. All forms of advertising are used by the interviewees, with still a very strong emphasis on print and more traditional advertising and they believe that this is the best way to attract new customers to e-commerce.

Their advertising budgets are quite significant, as this is their main point of contact to their customers, which has traditionally been a physical store in ag retail.

4.2 Relationship

As the e-commerce option is quite new in the Agri sector, the interviewees have had a strong emphasis with building the relationship with the farmer and the e-commerce platform. Their teams are busy contacting new and existing customers to share the benefits of this sales channel.

4.3 Field Days

Field Days have been extremely important for the interviewees, this makes them more visible to farmers and often gives them credibility as a reputable supplier, in a sector that is still developing in e-commerce.

The Field Days also add to the points discussed above, as it is great place the showcase what you are really about and great place to discuss and connect with your customers.

Marketplace themes

Marketplaces like Trademe are probably the first place where farmers engaged in e-commerce activities, where they have either sold or purchased products from, or sold to, other farmers/growers.

Now with the popularity of Trademe in the Agri sector, Agri supplies businesses are now using Trademe as a channel to advertise and sell their products. The businesses I interviewed here were in Ag Machinery sales, which were the dominant businesses using this sales channel, with the main themes outlined below.

Reputation

Trademe has a great reputation as a buy sell platform and most farmers have no problem with using it, as they have done so for many years. Trademe also has a reputation as a place where farmer can get a good deal which is often popular with most farmers.

Performance

Trademe is used mainly by interviewees to sell used machinery, traded in to buy new machinery. Listing/advertising this used machinery via Trademe outperforms any other sales channel for these products 10 times over.

Replicate

Following the success of Trademe with used machinery sales, the interviewees are now beginning to include an online store on their own websites, which takes them into another aspect of ecommerce.

Farmer Response

In addition to gaining insight and experiences from agricultural businesses that operate online stores, I also wanted to see how farmers in New Zealand felt about purchasing farm inputs via online stores, to see if this was a purchasing channel where we are likely to see strong growth and opportunities going forward.

The survey was created on the Survey Monkey platform and shared on different farming Facebook pages. 109 people participated in the survey, with most New Zealand regions and farming types covered, and most age ranges. Survey questions and responses can be viewed in Appendix 3.

Ultimately the survey was run to see if farmers are willing to purchase farm input products via e-commerce, and from the sample size here the results very much show that they are. 83.49% of respondents were willing to make e-commerce purchases for farm inputs going forward, 3.67% weren't willing and 12.84% were still unsure about e-commerce purchases.

The range of products that respondents were willing to purchase via e-commerce was wide and varied. Figure 7 below shows the respondents' willingness to purchase various products via e-commerce (multiple choices were available).

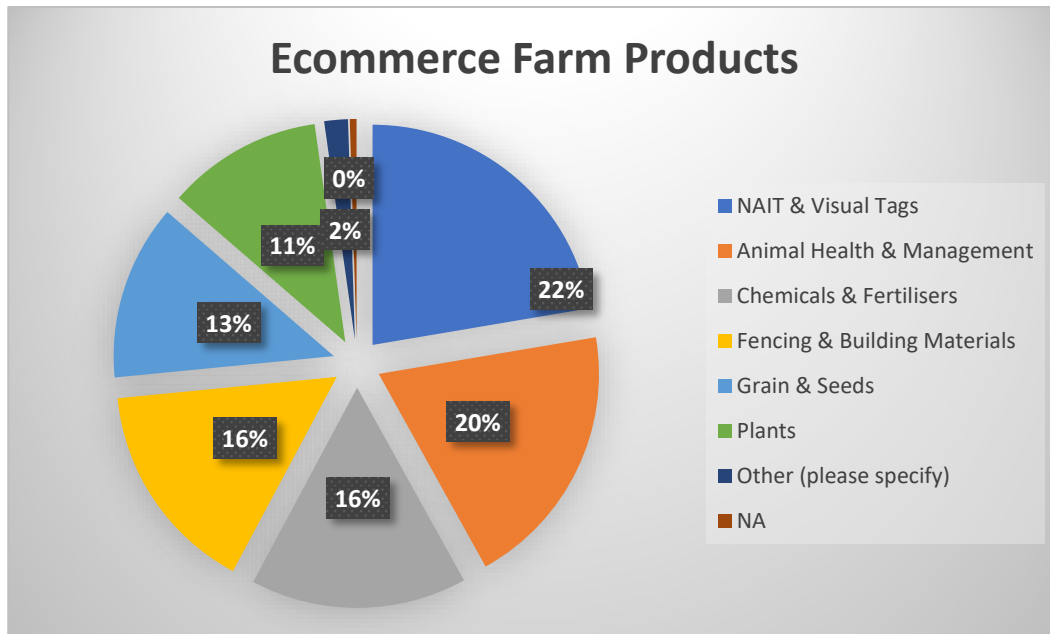


Figure 6. Pie chart showing product categories that farmers would purchase via E-commerce

The *Other* product types included.

- Machinery
- Tools & Equipment
- Livestock
- Sundry Items

Discussions

The results from the interviews and survey emerged with a strong emphasis on the **Growth** of e-commerce within the agriculture sector, which will be analysed in more detail in this section.

Customer Experience

Customer experience/ease of use is one of the most important aspects when developing an online store. The businesses interviewed as part of this research project have invested heavily in recent times to develop their websites to better serve the customers using their online stores, to provide them with a great experience and therefore encouraging them to keep returning as a customer.

A recommendation to peers (customer advocacy) will often drive them to check out a new method of purchasing, and farmers are no different. As this carries on and new customers have a great experience using e-commerce, the growth of e-commerce is going to continue and become something that all agricultural suppliers will need to be a part of.

The customer survey highlighted that while customers were happy to purchase online, 64% of respondents wanted detailed product information, and 60% were worried about product quality. I think these can be aligned by retailers to produce excellent and detailed product information. Live chat was not highly demanded by this group (only 14%) so the information is best to reside within the page.

Shipping infrastructure also created barriers to purchase for survey respondents with 43% demanding free shipping and 50% finding shipping options to rural addresses difficult.

It was encouraging to see that the retailers understood many of the challenges above but focussed with investment into website infrastructure – search functions, chat, and page flow. The online-only retailers had large teams to provide product information, but as they don't have stores the shipping options are limited to New Zealand's postal infrastructure. The bricks and mortar stores have an opportunity to implement omnichannel options for shipping but lack resourcing to provide good quality product information to their online customers.

Competition

The development of agricultural e-commerce has increased competition between competing businesses, which has helped them to grow within this space. As you will see in other sectors e-commerce is now a dominant force, so the constant development of these platforms is testing each competitor who in response are improving their own platforms. This makes e-commerce a more desirable option and therefore driving e-commerce growth within the agricultural sector.

COVID 19

The COVID 19 pandemic has created many difficulties for farmers and suppliers with regards to their operations. However, for agriculture e-commerce growth it has been somewhat of a shining star. This has occurred in two distinct ways (supplier and customer).

- Supplier – Suppliers who did not have an e-commerce channel prior to the pandemic realised that they were going to be in serious trouble if they didn't develop something quickly, to be able to serve their customers with the restrictions in place. This started out in quite a simple format which is now growing and becoming a very important part of their business.
- Customer – Farmers who had been unsure/not interested on the idea of purchasing input products online, were left with not too many other choices, when the lockdowns occurred. These customers were essentially forced into this option and have now become comfortable and familiar with it and are now continuing to use e-commerce for purchasing certain products. This situation has therefore contributed to the recent growth of Agri e-commerce.

Farmer Survey

The farmer survey demonstrated the willingness of farmers to now purchase Agri products via e-commerce websites. Although the sample size wasn't large this still provides a good indication of e-commerce's growing popularity and if this further develops in Agriculture, there are going to be great growth opportunities for the businesses involved.

The diverse range of products that farmers are currently purchasing via e-commerce indicates further opportunities within e-commerce for Agri businesses.

Conclusions

Ecommerce is creating further growth and opportunities for Agricultural supplies businesses.

The New Zealand agriculture retail sector is well behind other retail sectors when it comes to ecommerce, however we have seen accelerated growth in the sector. COVID-19 pandemic forced ecommerce on many, where online was the only available sales platform for many farmers and stores due to lengthy lockdowns. My research has shown farmers are willing and able to use ecommerce – this is a group of people who are highly familiar with marketplace platforms such as Trademe. There appears to be a hesitancy for farmers to purchase agricultural products online, due to poor product descriptions and worries about quality and delivery. This shows that there is significant opportunity, particularly for omnichannel retailers to listen to their customers to improve and satisfy the requirements of this group.

Agriculture has a strong people focus (advice, support etc) and therefore farmers have strong connections/relationships with the people who assist in the running of their business. This provides a significant opportunity for omnichannel services (connected physical and online stores). This allows them to deal with shop staff when purchasing farm inputs (particularly new products) and the business can upsell, support into alternative products, and then resell via online for hassle-free purchasing. Furthermore, given the nature of expensive and difficult rural delivery, pick-up options are available (and therefore more conversation with the customer).

The development of Agri ecommerce in New Zealand has only really just begun and a close watch on overseas developments will be important. When you consider some of the marketplace developments taking place in the USA, you can only think that these platforms will benefit both farmer and supplier here. The opportunities are available for those willing to develop great ecommerce options in agriculture, as the willingness from farmers to shop in this format is certainly there.

Full Agri ecommerce opportunities and growth are somewhat hinged on the current connectivity issues experienced in rural areas. There is significant work taking place to improve this, with the Rural Connectivity Group (RCG) in place to provide the infrastructure to bring 4G wireless broadband and 3G mobile services to rural areas. In addition, there are now alternative options available to improve rural connectivity, with Elon Musk's Starlink (Satellite) internet gaining popularity in New Zealand. The signs for improved rural connectivity are positive, so hopefully this pans out so the full extent of Agri ecommerce can be realised.

Recommendations

- Prioritise physical and online store (omnichannel) offering by Agri Suppliers. Ensure farmers receive connected human and digital interactions.
- Measure and monitor customer experience metrics to ensure their online sale platforms are performing and fit for use in Agri ecommerce platforms. i.e., Responsive design for use across Desktop, Tablet and Mobile.
- Internet connectivity is still an issue in many areas, so page load speed should be an important metric to monitor (important to sales conversion). Small photos (mb) will help with the page load speed.
- Keep a close eye on Agri ecommerce developments overseas, there is a lot going on in this space and could be some great opportunities for NZ.
- Attract farmers with development of clever marketing and advertising ideas, especially to grow and maintain customers.
- Farmers should continue to explore available e-commerce options, as online stores offer a much better service than they did a year ago, let alone five years ago.

Limitations

Due to the slightly sensitive nature of my interview questions, there were a couple of businesses who I approached to interview, who declined. I am sure that these interviews would have added some further insight to benefit my research, however I was still able to establish plenty of themes and ideas from the interviews completed to fulfill my research ambitions.

New information in relation to ecommerce and even Agri ecommerce is constantly being published, so please do your own research on these topics, as some of the information collected during my research could have now been superseded.

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I would like to recognise Nicole Mesman whose report helped me to shape the thematic analysis of my own and whose report structure and thematic maps I mirrored in my project and report.

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Also, to Scott Champion and Lisa Rogers who constantly went over and above to make the course run smoothly. Course 45 was certainly challenged by COVID 19, and you have done a great job presenting this in a different format.

To Leader Products International Ltd thank you very much for giving me time to attend the contact parts of the course and work on my project.

To the rest of the Course 45 participants, thank you, it has been an honour to meet you and I look forward to meeting you again in the future and seeing where this takes you.

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Appendices

Appendix 1 - Interview questions

Ecommerce and its growth/opportunities for Agricultural Inputs

As part of the Kellogg Rural Leaders Course (Cohort 45), I am investigating the role of Ecommerce platforms to farmers as a means of purchasing their farm inputs. As part of my research project, I will be conducting interviews from several different stakeholders operating in the Agri Ecommerce space.

Due to the sensitive nature of some of the questions being asked, no names or organisations will be shared with the information gathered and the Chatham House Rule will be applied by default.

Please see the attached consent form, to be completed, which outlines the use & handling of information gathered from the interview.

Please ignore any questions that are not relevant to your situation.

Interview Questions

- 1. Internet Focused. (Does our rural internet infrastructure support Agri Ecommerce?)**
 1. In your opinion, what is the current state of internet connection in rural areas?
 1. What is the percentage of rural areas without internet?
 2. Does internet speed in rural locations support the use of Ecommerce?
 2. What percentage of farmers/growers use the internet?
 1. How often do they use it?
 2. What influences them to use the internet?
- 2. What are the drivers of Agri Ecommerce?**
 1. In your opinion, how has the global pandemic influenced Agri Ecommerce?
 2. How have new market players driven the development of Agri Ecommerce?
 3. How has the younger generation influenced Agri Ecommerce?
 4. How is Ecommerce becoming a more viable option for farmers?
 5. What are some current influences for farmers to take up Agri Ecommerce?
 6. What are some of the difficulties to be involved with Ecommerce?
- 3. In terms of their E-Commerce practices, how would you describe your customers?**
 1. Have any specific customer profiles been identified for Agri Ecommerce customers?
 2. Are there certain times of the day when Agri customers are online & making purchases?
 3. What are the best ways to advertise to Agri customers?
 4. What social media platforms do Agri customers use?
- 4. Which Agri products can Ecommerce accommodate?**
 1. Do you see Ecommerce becoming more widespread in the purchasing of Agri Inputs?
- 5. What are the main points of customer attraction to Ecommerce?**
- 6. What are the main influences that keep customers using Ecommerce?**
- 7. Do you believe that Ecommerce can provide positive environmental outcomes & why?**
- 8. Please describe any notable successes of your ecommerce platform.**
- 9. What improvements would/do you need to make to your ecommerce platform?**

Appendix 2 - Interview consent

Shaun Green - Kellogg Rural Leaders Course (Cohort 45)

Research Project

Ecommerce and its growth/opportunities for Agricultural Inputs

Consent to take part in research

- I..... voluntarily agree to participate in this research study.
- I understand that even if I agree to participate now, I can withdraw at any time or refuse to answer any question without any consequences of any kind.
- I understand that I can withdraw permission to use data from my interview within two weeks after the interview, in which case the material will be deleted.
- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves being asked a range of research questions, to assist the researcher in gathering information for his/her research project.
- I understand that I will not benefit directly from participating in this research.
- I agree to my interview being audio-recorded.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous. This will be done by changing my name and disguising any details of my interview which may reveal my identity or the identity of people I speak about.
- I understand that disguised extracts from my interview may be quoted in a published research paper & research project presentation.
- I understand that signed consent forms, original audio recordings and notes will be retained by the researcher in their password protected laptop computer until after Friday 26th of November, when all the course & research projects are all completed.
- I understand that a transcript of my interview in which all identifying information has been removed will be retained until after Friday 26th of November, when all the course & research projects are all completed.
- I understand that under freedom of information legalisation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Shaun Green, BAppSci, Kellogg Rural Leaders Course & Lincoln University PGCert Commerce.

Dr Patrick Aldwell (Project Coordinator)

Signature of research participant

Signature of participant

Date

I believe the participant is giving informed consent to participate in this study

Signature of researcher

Date

Appendix 3 - Survey questions and results

eCommerce in New Zealand Agriculture

Q1. What sector/s do you farm?

Answer Choices	Response	
	Percent	Responses
sheep,	31.19%	34
beef	34.86%	38
dairy	55.96%	61
deer	16.51%	18
Arable (including grain and seed crops)	3.67%	4
Horticultural (including fruit and vegetables, wine grapes, and nursery plants)	7.34%	8
Forestry	7.34%	8
Lifestyle farming	19.27%	21
Other (please specify)*	3.67%	4
	Answered	109
	Skipped	0

*Calf Rearer, Nutritional and animal health, Farrier & Dairy Goats

Q2. What age bracket do you fall in?

Answer Choices	Response	
	Percent	Responses
Under 18	0.00%	0
18-24	6.42%	7
25-34	34.86%	38
35-44	20.18%	22
45-54	14.68%	16
55-64	18.35%	20
65+	5.50%	6
	Answered	109
	Skipped	0

Q3. What region do you live?

Answer Choices	Response	
	Percent	Responses
Northland	6.42%	7
Auckland	3.67%	4
Waikato	36.70%	40
Bay of Plenty	8.26%	9
Gisborne	0.00%	0
Hawkes Bay	5.50%	6
Taranaki	0.92%	1
Manawatu/Whanganui	6.42%	7
Wellington	3.67%	4
Tasman	0.92%	1
Nelson	0.92%	1
Marlborough	0.92%	1
West Coast	0.92%	1
Canterbury	14.68%	16
Otago	5.50%	6

Southland	4.59%	5
	Answered	109
	Skipped	0

Q4. What do you currently purchase online?

Answer Choices	Response Percent	Responses
None of the above	2.75%	3
Trademe auctions or marketplace	85.32%	93
Clothing, shoes & beauty	56.88%	62
Agricultural products	57.80%	63
Equine gear	11.93%	13
Hunting and fishing gear	31.19%	34
Other (please specify)	15.60%	17
	Answered	109
	Skipped	0

Q5. When purchasing online what is important? (Multiple answers)

Answer Choices	Response Percent	Responses
No fuss returns	41.67%	45
Lowest price	45.37%	49
Live chat for help with products and purchasing	14.81%	16
Free shipping	42.59%	46
Wide product range	43.52%	47
Product warranty	40.74%	44
Farmlands' card purchasing	21.30%	23
Ability to visit or pick up/return at a store	37.96%	41
Detailed product information	64.81%	70
Other (please specify)*	13.89%	15
	Answered	108
	Skipped	1

* Simplicity (no pushy sales people), Convenience, Right product and good service, Physical store not in my region and needing specialist products/advice, Easy to navigate website & good search function, I just buy what I need, Feedback on seller to determine if trustworthy, Cheap rural shipping, Trusted brands.

Q6. When did you last purchase a farming product online

Answer Choices	Response Percent	Responses
Within 1 month	59.81%	64
Within 6 months	23.36%	25
Within 1 year	5.61%	6
Over 1 year	5.61%	6
Never	5.61%	6
	Answered	107
	Skipped	2

Q7. What would you be comfortable with purchasing online?

Answer Choices	Response	
	Percent	Responses
NAIT & Visual Tags	82.57%	2
Animal Health & Management	72.48%	90
Chemicals & Fertilisers	58.72%	79
Fencing & Building Materials	57.80%	64
Grain & Seeds	47.71%	63
Plants	42.20%	52
Other (please specify)*	6.42%	46
NA	1.83%	7
	Answered	109
	Skipped	0

*Equipment (eg. sprayers, fert applicators, specialist gear), Tools/ equipment, Sundry items, Livestock.

Q8. What makes it most difficult to purchase online?

Answer Choices	Response	
	Percent	Responses
Deciding on a product	23.85%	26
I like to speak in person	29.36%	32
Limited shipping options for rural	49.54%	54
I'm scared to order the wrong thing	31.19%	34
I don't know how to return products	9.17%	10
I'm worried about the quality of the product	60.55%	66
I've never heard of the brand before	23.85%	26
I want to use my farmlands card	10.09%	11
Other (please specify)*	12.84%	14
	Answered	109
	Skipped	0

*Lack of product information, rural shipping costs, timing between purchase & delivery, confidence of knowing what you are getting.

Q9. Do you see Ecommerce as a viable option for purchasing agricultural products going forward?

Answer Choices	Response	
	Percent	Responses
Yes	83.49%	91
No	3.67%	4
Unsure	12.84%	14
	Answered	109
	Skipped	0