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E-commerce: Platform for Disruption

Re-evaluating the Farm Inputs Value Chain Through E-commerce

RaboResearch

Food & Agribusiness
far.rabobank.com

[Samuel Taylor](#)

Analyst - Farm Inputs
+1 212 808 6814

[Dirk Jan Kennes](#)

Global Strategist - Farm
Inputs
+852 2103 1423

[Wesley Lefroy](#)

Analyst - Agriculture
+61 2 8115 2008

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E-commerce accounts for a small amount of total farm input purchases in North America, with estimates in low single digit percentages, and only about one-quarter of US farmers making online agricultural purchases at all. With clear scope for growth in online sales, e-commerce remains an as yet under-developed disruptor within farm inputs. Many of these potential disruptions are predicated upon existing secular trends within the farm economy, while many of the opportunities are as a direct result of effective e-commerce strategies.

While we believe that existing omni-channel retailers (bricks and mortar) are best placed to capture this growth, they face an asymmetric risk from established e-commerce behemoths, product producers, as well as smaller start-ups. However, to fully leverage the value of e-commerce platforms, the service must be part of a broader digital and data-driven ecosystem.

This ecosystem could disrupt the status quo of brand incumbents, shifting decision making to an ROI maximization vs productivity maximization. Data-driven decision making, tied to services prescriptions will hold ultimate efficiency in a 'brand agnostic' environment.

The value proposition of farm inputs products will be increasingly democratized as data and analytics gain weight in the farmer's decision-making process. This will necessitate value to be added not purely through supply chain (cost) efficiency, but increasingly on-farm and beyond the farmgate. For farm input companies to deliver this, data will prove an essential component.

Relevance Today and Tomorrow

Making reference to the obvious straight out of the gate may make things easier going forward: Amazon. Amazon is synonymous with our perceptions and prejudices of e-commerce. Within the context of agricultural inputs retail, however, it is an imperfect comparison. Farmers' buying patterns differ greatly from those of book buyers, or indeed any of Amazon's further iterations. The seasonality of fertilizer and seed purchases makes it hugely different to the velocity seen in consumer grocery purchases, for example, and with that comes a different value proposition for capital investment.

Seasonality being a significant difference, there are some comparisons that we can look at for guidance. Amazon was ruthlessly efficient at exploiting an overbuilt retail landscape, they have tapped into changing customer trends, putting the value of the customer front and centre of their business model. They continue to 'democratize' data or brand value by creating customer reviews of products. And they have completely re-evaluated the value chain, taking the process of buying a book from the customer's interaction with a person behind a counter to one with an array of suggestions, choices, prescriptions and data, conveyed through a computer.

This will be the last mention of Amazon (I promise!), but what they succeed in doing with their business model continues to have profound impacts up and down the value chain: it is not just retailers that have seen the 'Amazon effect'. Amazon forced other retailers to adopt a spectrum of e-commerce approaches, they impacted the logistics and supply chains of product producers, they altered the expectations of customers with prompt delivery, and BORIS (buy online, return in-store) became a facet of inventory management and replenishment. More importantly, they created near-monopoly power. Efficiency, scale and access to cheaper capital than competitors allowed them to drive margin out of their spaces, disincentivizing competition. They revolutionized the flywheel.

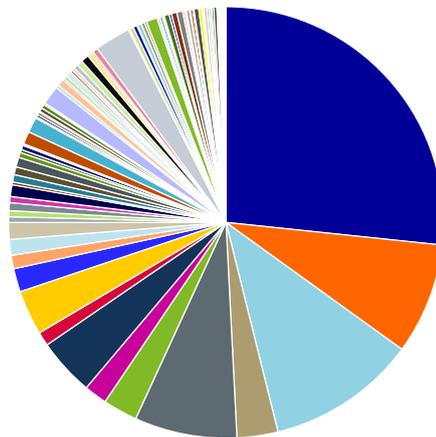
E-commerce has been slow to take off in farm inputs. Seasonality, habits, products and market structure could all be highlighted as preclusive to the business model, but Covid-19 has highlighted a willingness by farmers to explore new purchasing options and with that comes the potential for disruption. More ubiquitous on-farm data use, sustained low commodity price environments and comfort with use at home are all conducive to the greater adoption of e-commerce on the farm. We believe that it will be increasingly important for ag retailers to have an e-commerce strategy going forward, whether 'click and collect', or a full-fledged purchase and delivery process. Similarly, we anticipate further disruption along the farm inputs value chain.

Contextual Landscape

Existing Retail Platforms in Farm Inputs

By location, the ag retail landscape appears divided. In an analysis of the top-100 ag retailers by sales, we found that the top-ten ag retailers accounted for 74% of locations, with the top-three accounting for roughly 49% of those locations. This consolidated top end of the retail scale differed from the fragmented 'minnows' in the lower part of the scale. Of the top-100 retailers, 64% had fewer than 20 locations and 43% had fewer than 10.

Figure 1: 100 largest US agricultural retailers by sales, by retail locations*



Source: CropLife 2020

* Names of retailers have been deliberately anonymized.

Over the 13 years we analysed, the number of ag retail locations operated by the top-100 ag retailers measured by sales increased by ~50% (~3% p.a.), a trend that was accelerated by consolidation, particularly among coops. In that same timeframe, we have seen further acceleration of consolidation within the top-10 ag retailers as well.

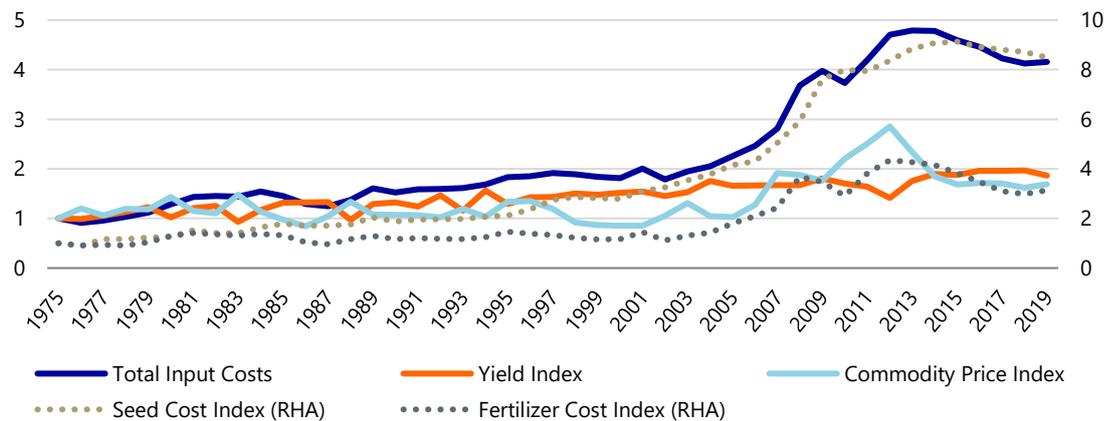
Scale is often a virtue within retail, allowing for greater purchasing power of products, supply chain efficiencies and inventory management. Greater geographic scope could minimize the cannibalization of ag retail locations and naturally lead to more effective utilization rates and

higher returns on fixed assets. More significantly, the capital outlay implicit in a comprehensive e-commerce and data-driven service model will leave the option beyond those without scale.

Value Creation: Input Prices as a Function of Value Created

"...[for a farmer] a low price of produce may be compensated to him by a greater additional quantity", so said the classical economist David Ricardo. This 'greater additional quantity', manifesting itself in a trendline yield growth within corn and soybeans in the US, has for many years been the basis of increased inputs expenditure, at least from 1975 through to 2005. The correlation between yield growth and input cost expenditure was 0.81 through this period, versus -0.17 for an inputs expenditure to commodity price increase correlation. However, between 2006-2012, commodity price rises proved the stronger predictor variable, correlating with input expenditure at 0.84. From 2013 onward, this correlation dissipates to 0.26.

Figure 2: Blended US corn/soybean production index



Source: USDA, Rabobank 2020

These inflection points frame an underlying question for farm inputs companies; what are the future catalysts for growth in farm input investment by North American corn and soybean farmers? Can they be commodity price increases? Can they be on-farm productivity growth? Absent external factors, like a further expansion of a biofuels mandate globally, the prognosis for growth in input pricing looks hard to place. Our analysis points to [a sustained low commodity price environment](#) while acreage expansion looks more likely in South American geographies than in the mature markets of Europe and North America, given [Brazilian competitive advantages](#).

Similarly, what is the outlook for the current North American ag retail landscape, given the increased concentration of retailers into fewer and larger entities? Compounded by a prolonged low commodity price environment, further farm consolidation, changing consumer trends and more ubiquitous on-farm data applications, we would expect further consolidation within the North American ag retail landscape.

Value Chain Analysis

As a process, e-commerce has been incredibly disruptive for value chains. Brick and mortar retail has borne the brunt of this disruption, but supply chain efficiencies, logistics and additional customer services have been similarly impacted. Data has been an integral part of the efficiencies created by e-commerce on Main Street and has been a key facet in driving the 'flywheel' of e-commerce.

Shifting the Value Chain and the Fulcrum

We would not be far from the mark by painting the old farm inputs value chain as a fragmented, linear process, with few feedback loops. Depending upon your position within the farm inputs

value chain, your success was driven by combination of seasonal and market factors and validated by the customer walking in through your door. We would highlight two fragmentations in the traditional farm inputs value chain:

- Farm input product producers and developers, whose function sits in product development and product manufacturing
- Farm inputs retailers, whose focus has been on distribution, sales and ancillary services to farmers

This traditional view places the fulcrum of the farm inputs value chain upstream of the farmer, allowing farm inputs companies to leverage their ability to drive on-farm productivity for their growth. As mentioned above, the secular trends suggest that this mandate may offer slower growth than historical precedent suggests. For future growth, farm inputs companies should be increasingly focussed on 'how' farmers produce, not merely on 'what and how much'. Under these auspices, the farm inputs value chain should capture two additional fragmentations:

- Farm produce origination, providing solutions to marketing and mid-market connectivity through product/process validation
- Downstream connectivity, providing product/process validation with down-market connectivity and connection to FMCG and end consumers

We draw two conclusions from this hypothesis; 1) the fulcrum of power within the farm inputs value chain has shifted, placing the farmer central to value creation and highlighting the necessity for on-farm data collection, 2) where historically 'the product' has held sway in value creation for input companies, increasingly this will be ceded to 'the process'.

So Where Does E-Commerce Fit In?

E-commerce is an example of 'the process' and should be viewed as an ecosystem that encompasses more than just the efficient supply and distribution of inputs. Within this ecosystem we envisage three systems/platforms that, taken together, leverage each other's value. They are;

- A sales and distribution platform
- An on-farm data aggregation platform
- An offtake platform

Where one platform alone is able to drive growth through a virtuous flywheel process (for example; e-commerce providing greater supply chain efficiency > leads to greater asset utilization > lowering fixed costs > enables lower product price > drives more customers to the platform > enhancing supply chain optimization > leading to greater asset utilization...), the ultimate elixir is to link the platforms. In [recent research](#), Rabobank highlighted the potential benefits associated with inputs providers taking a more active role in on-farm decision making. Similarly, in [other research](#), we outlined the infrastructural needs for technology to aid on-farm decision making. The point at which e-commerce meets data-driven decision making provides the nexus for retail alchemy; automated fulfilment. This link could similarly be drawn for offtake platforms as well – where aggregation of on-farm information through 'Internet of Things' (IoT), complimented by cloud-based data across a multitude of variables may provide superlative ground for algorithmic decision-making (and productivity). However, linked to e-commerce and prescriptive services, this creates a unique opportunity to cater to downstream offtakers and contract production.

Not all e-commerce platforms will be created equally and not all inputs companies hold the same position within the farm inputs value chain. Additionally, we have seen non-agricultural farm inputs companies approach this market in some Asian countries, while venture capital funds have helped establish nimble start-up competitors. Not all e-commerce models are the same, and it is important to separate the different attributes within the future retail landscape:

Table 1: E-commerce platform strengths/weaknesses

	<i>FI companies</i>		<i>Non-FI companies</i>	
	<i>Product Manufactures</i>	<i>Agricultural Retailers</i>	<i>E-commerce Platform</i>	<i>Third-Party Click and Collect</i>
Existing Farm Customers	✓✓✓	✓✓✓✓	✓	✓✓
Retail Presence (Omni Channel)	✓✓✓	✓✓✓✓	✓✓	✓
Industry Expertise	✓✓✓	✓✓✓✓	✓	✓✓
Portfolio Scope	✓✓	✓✓✓✓	✓✓✓	✓
Product Impartiality	✓	✓✓✓	✓✓	✓✓✓✓
Farmer Trust	✓✓✓	✓✓✓✓	✓	✓✓
Business Systems	✓✓	✓✓✓	✓✓✓✓	✓
Network Structure	✓✓✓	✓✓✓✓	✓✓	✓
Platform Expertise	✓	✓✓	✓✓✓✓	✓✓✓
Logistics Structure	✓✓	✓✓✓✓	✓✓✓	✓
Downstream Connection	✓✓	✓✓✓	✓✓✓✓	✓

Source: Rabobank 2020

In assessing the viability of each type of e-commerce player within farm inputs, we evaluated the potential business processes to deliver the optimal e-commerce ecosystem along with the network structures currently in place. We found that existing agricultural retailers benefited from impartiality, portfolio scope, existing expertise and their current retail footprints, but lacked some e-commerce expertise. Conversely, existing e-commerce platforms benefited from technical e-commerce knowledge but lacked the agricultural credibility and expertise. Farm inputs product producers lack impartiality, portfolio scope as well as many of the business systems and networks to deliver an effective e-commerce platform to farmers.

Conclusion: Points to Consider

E-commerce +: e-commerce should be viewed as a broader ecosystem to deliver full potential. For individual farmers, data-driven decision making can shift the value proposition of input investment from yield maximization to profit maximization. An ecosystem that partners on-farm process measurement with product supply chains can leverage the value of both platforms in the service of farmers.

Product innovator vs process innovator: data democratizes decision-making and threatens the incumbency of brand value within farm inputs. Data-driven decision-making functions as a service, as well as marketing for products. The impartiality of 'process-driven' decision-making that is brand agnostic is likely to offer a greater scope of solutions to farmers. This raises the question of who is best placed to leverage the value of on-farm data platforms; product innovators or process innovators?

Omni-channel: existing farm inputs retailers are best positioned to capitalise on the expected growth in farm inputs e-commerce. Those with scale are likely to leverage better fixed cost efficiencies. This could further consolidate the North American Ag retail market.

Purchasing power: e-commerce is likely to force continued concentration in the North American agricultural retail market. This concentration is likely to increase the leverage that retailers have over farm inputs product producers. Direct-to-consumer approaches for inputs product producers are likely to prove cost inefficient when facing the scale and scope of more expansive e-commerce platforms.

Imprint

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far.rabobank.com

Samuel Taylor	Analyst - Farm Inputs	Samuel.Taylor@rabobank.com +1 212 808 6814
Dirk Jan Kennes	Global Strategist - Farm Inputs	Dirk.Jan.Kennes@rabobank.com +852 2103 1423
Wesley Lefroy	Analyst - Agriculture	Wesley.Lefroy@rabobank.com +61 2 8115 2008

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