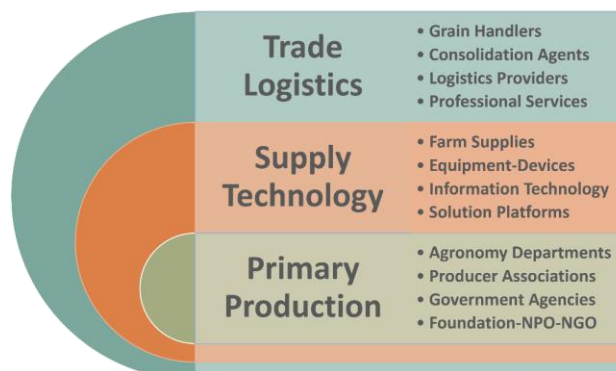# Reaching out to the supply-technology sphere

We recently posted an article on the broader *grain-ecosystem*, where we break down its three separate spheres – primary-production, supply-technology, and trade-logistics – all vital to the functioning of actual production-units, individual farming enterprises. We have since dealt with the primary-production sphere in some detail; here we turn to the supply-technology sphere, with the intention of coming back to the trade-logistics sphere with another article in a couple of weeks.

As we emphasize repeatedly, the Prairie region is among the world's most advanced and diversified grain-regions. In this regard we give much credit to the ingenuity of our producers, but we should also acknowledge the support they draw from the supply-technology sphere. In promoting our farm-economy in overseas markets, our portal will pay as much attention to the broader grain-ecosystem through *regional-profiles* as we do to primary production-units through individual *farm-profiles*.

We aim to evolve from our current *information-portal* state to our *virtual-grain-mall* where overseas buyers can discover the Prairie grain-economy with all its virtues displayed online. While farms will be on display as *virtual-stores*, collective regional virtues will be showcased through *virtual-pavilions*. Many of the pavilion-themes will focus on the elements of the supply-technology sphere, while individual suppliers or vendors can sponsor their own stores or even specialized pavilions.

Our primary mission is to promote crop-exports in overseas markets through direct-sales channels, thereby facilitating further crop-diversification that we strongly believe will yield higher margins for producers. To this end, we extol the virtues of not only our farms but also the support they get from the supply-technology sphere. Thus, there is a compelling case for suppliers and vendors from this sphere to get more directly engaged in our promotional efforts in self-interest, mainly in two veins.

First, they will expose themselves to overseas markets where they can promote their own offerings. Our main target audience is grain-buyers, but we can extend our virtual-reach to related audiences of interest to our suppliers and vendors. Second, our case-studies will demonstrate the benefits of new technologies and solutions, helping vendors expand their domestic sales – as we will get into below, our grain-economy still seems to face a technology adaptation or penetration challenge.
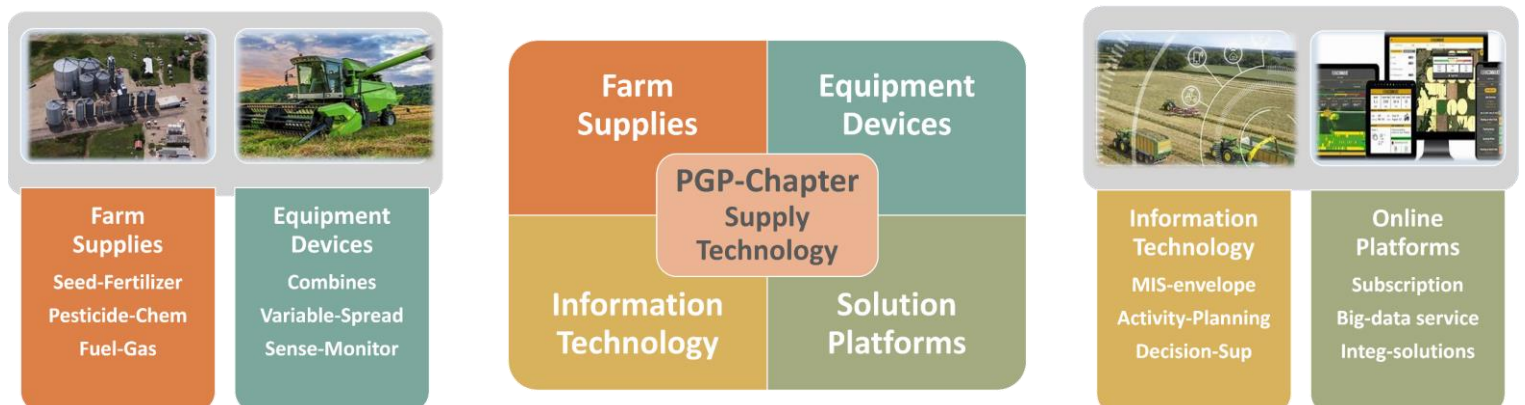
Our approach, tools, and venues

As we discussed in our previous article on the grain-ecosystem, we view the *supply-technology* sphere in four segments: farm-supplies, equipment-devices, information-technology, and solution-platforms. From a producers' perspective, these domains may be overlapping and needing integration, but their suppliers and vendors tend to be quite distinct and must be approached individually to rally behind our cause.

Though the best approach would be to compile a comprehensive supplier-vendor list, this is easier said than done. Thus, we are now approaching this challenge through indirect means, while identifying as many suppliers and vendors as we can:

> ➢ Farm-Profiles: We are casting our net as widely as we can to develop a representative base across the Prairies. Where we can identify candidates with advanced technology or special applications, we flag them for further scrutiny.

> ➢ Theme-Profiles: As more farms subscribe to our farm-profile program, we will be able to identify advanced (or interesting) ones to profile with a technology, solution, system, or other special features (crop-diversity, sustainability, etc.).

> ➢ Vendor-Profiles: Down these profiling tracs, we will get a chance to identify leading suppliers or vendors to profile. Also, as we publish these profiles, more vendors will come forward to be profiled from technology (or other) angles.

This year we hope to post at least 100 *farm-profiles*. Also, we are confident we will be able to select 25 *theme-profiles*, which will mostly take the form of *case-studies*. Out of all this we will come up with at least 25 vendor-profiles, which we will tackle with the collaboration of the participating vendors. As these profiles are compiled, they will be posted on our current portal, and later migrated to our new platform.

The goal is to incorporate all these profiles into our showcase theatre, *Prairie Grain Mall*, where our grain-economy will be on virtual display with all its attributes and virtues. Individual producers will be on display with their farm-profiles, which in the new platform-structure will be *virtual-stores*, while suppliers or vendors will be promoted through *virtual-pavilions* (theme-profiles as labelled above). We will also help any willing supplier or vendor to develop their own virtual stores or pavilions.


Farm Supplies
Seed-Fertilizer
Pesticide-Chem
Fuel-Gas

Equipment Devices
Combines
Variable-Spread
Sense-Monitor

Farm Supplies **Equipment Devices**
PGP-Chapter Supply Technology
Information Technology **Solution Platforms**

Information Technology
MIS-envelope
Activity-Planning
Decision-Sup

Online Platforms
Subscription
Big-data service
Integ-solutions

Farm Supply Cluster

The Prairie region has the world's largest and richest mineral-base for not only the full spectrum of fertilizers (potash, nitrogen, phosphate, or sulfur) but also nutrients, pesticides, insecticides, and other substances. The region's producers have direct access to a huge variety of farm-inputs to choose from, depending on what crops they grow, soil and growth conditions they face. All these inputs are available through competitive channels, be it producers' own or third-party distributors.

➢ Input Producers: The region is home to the world's largest farm-input company (Nutrien), not only supplying domestic markets but also exporting to overseas. There are also several others, niche producers or global-giants in this business, with competing products they make with access to the same rich mineral-base.

➢ Distribution Channels: Inputs can get to farms through multiple channels they choose from, everything delivered to them (including fuel) by Federated Coop, or by multiple channels (producers or third-party distributors), with also the option of driving down the road for pickup from an independent outlet or coop.

➢ Knowledge Base: We would not want to take away from farmers' wisdom but farm-input-management, and the progress we have made in this domain could not have happened without the deep-well of agronomy-knowledge we have across our region – as important an edge as our unmatched mineral-resources.

➢ Seed Suppliers: We often take for granted but it would be hard to find another region in the world where farmers have such a choice of seed-supply sources. In addition to corporate-sources, our farmers have access to a multitude of seed-farms around them – a rather fragmented but highly vibrant domain.

We will make every effort to reach as many suppliers and distributors as we can, with the hope of profiling them to our audiences. We will then migrate these profiles to our *Virtual Grain Mall* – vendor-store or theme-pavilion sections. We will give particular attention to the *agronomy-knowledge* and *seed-supply* domains, as they are both vital to our value-driven crop-diversification strategy. We included the agronomy-domain in our primary-production sphere, but we will also try to reach as many seed-farms as we can to get them to actively participate in our mission.
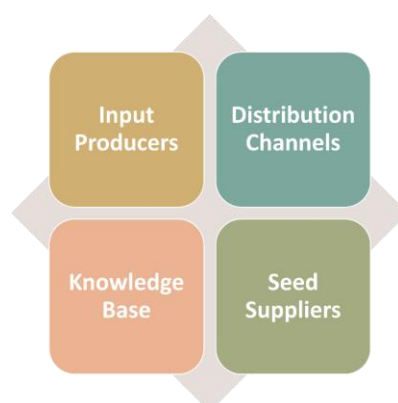
Farm Equipment and Devices

Grain-farming has undergone a massive technology-transformation, with latest farm-machines in the fields equipped with position-tracking and automated-guidance devices. Operators of latest combines sit in *cockpits*, watching map-displays and monitors while navigating their machines, which often have variable-rate-spreading devices as well as monitors to detect moisture-levels and soil-conditions.

In presenting our grain-economy's advancement, we will rely on our standard tools:

➢ Farm-Profiles: Our standard format has a technology-component, but it is up to the participating farm-owners to decide how much detail to display or discuss.

➢ Technology-Profiles: We will augment these farm-profiles with case-studies on technology themes – farming methods/practices or equipment/device features.

➢ Vendor-Profiles: We will also invite vendors to prepare or sponsor their own to promote their brands – equipment models, auxiliary devices, or other features.

These elements will be moved onto our *Grain Mall* platform as that replaces our current portal. Some items will be appended to *virtual stores* (farm or vendor sponsored) while others will be incorporated into appropriate thematic *pavilions*. In addition to these more promotional pieces, we will undertake or commission more in-depth studies on specific topics or concerns to our core constituency, producers:

➢ Equipment affordability: There are huge discrepancies in equipment renewal, with the largest farms replacing combines (most expensive items) every year, while as you go down the scale-ladder you find older equipment. If the mega-farms are making rational decisions, these discrepancies raise huge concerns for the health of our farm-economy. Thus, the matter requires further study to see if finance-remedies are required, and how they can be implemented.

➢ AI-driven or autonomous devices: These are also expensive items promoted by many technology-advocates. The first question is whether yield and quality improvement benefits do indeed justify the expense at these early stages. The next is whether, like latest farm-machinery, they can be afforded by all farms irrespective of scale. If the investment-economics support them, then suitable finance instruments will be needed to make them universally affordable.

Equipment Renewability | Affordability Barrier

Challenges

Cost-Benefit Justification | Finance Instruments

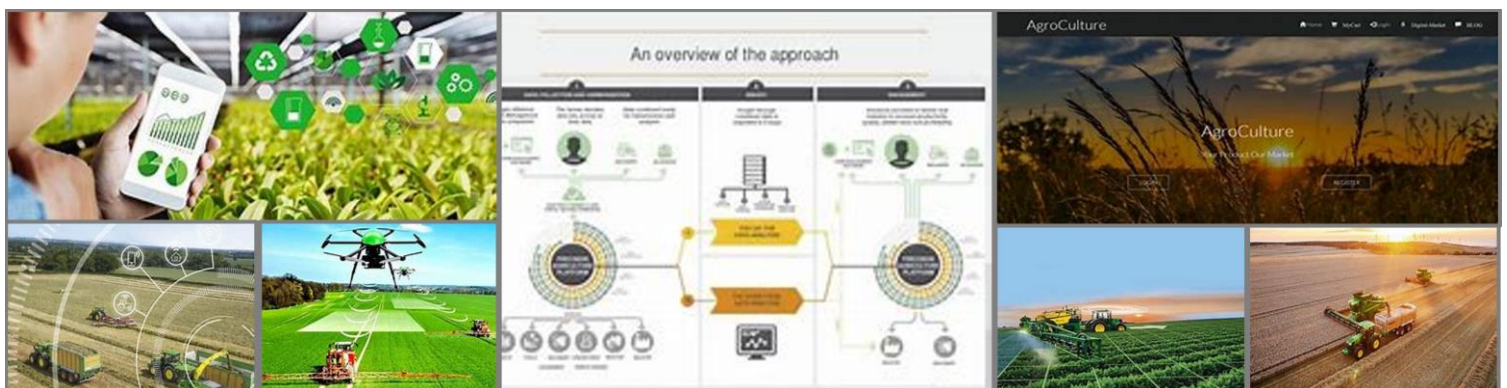**Management Information Systems**

Farm operators have wireless access to field-data, which they can actively use for integrated activity-planning purposes, and in real-time for decision-support – seeding to fertilizing to growth to harvesting. With so much data and need for precision-applications, there is scope for more sophisticated applications, with the added benefits of managing farm-inputs and crop-yields. Also, there is room to push the MIS-envelope further with *big-data* to facilitate more effective seeding and harvesting practices, as well as yield forecasts for sales-and-marketing purposes.

The early MIS offerings in farm-management were appendages to accounting-packages, but like in other industry segments, there are promising trends underway:

➢ The more advanced offerings resemble integrated-enterprise-solutions like in other sectors of the economy. These may be affordable to larger farms but not within reach of most. Also, lack of in-house resources poses challenges in implementing and fully utilizing these systems to realize their full benefits.

➢ There is a promising trend towards online-platforms that store farm-data, and combined with data from external sources, offer subscription-based solutions. They are more affordable and greatly reduce the in-house IT-resource burden, but so far these types of solutions have achieved limited market penetration.

➢ However, the IT-industry segment targeting farming applications is growing, restructuring, and consolidating. As this process unfolds, we can expect more affordable and practical solutions in the offering, but in the meantime a lot can be done to facilitate this process as the potential benefits are real and huge.

We will pay a lot of attention to this domain to promote what there is in the way advanced farms, and to facilitate further MIS penetration into farms all sizes:

➢ From one end, we will showcase MIS applications through *case-studies* of advanced farms, which there are plenty of across the region. These will be incorporated into *farm-profiles* or *special-themes* on our *Grain Mall* platform.

➢ From the other end, we will continue to post articles on the subject (of our own or commissioned) while we also try to attract vendors or solution-providers to sponsor *case-studies* and stage their own *virtual-pavilions* on our Grain Mall.

Specialized IT-Solutions

Within this broad management-information-system (MIS) or information-technology (IT) domain, there are specific solutions that are of particular interest to us in carrying out our own mission, facilitating direct-sales to overseas export-markets. We are pursuing this mission to shift our export-mix to higher-value crops with specific attributes, requiring stricter quality-standards and grade-uniformity.

The motivation for producers is obvious, higher margins, but there is also a burden that comes with this shift, grade-achievement and identity-preservation. We will be extolling our technologically advanced state through *farm-profiles*, as well regional-profiles on *agronomy-research* capacity and *quality-assurance* regulations. But we can also make a strong case to this effect through readily available IT solutions.

We want to cast an image of a grain-economy where new technologies are literally turning farming into a grow-to-order business, perhaps not quite to manufacturing-standards but still far superior to what buyers get from bulk-stocks. In this vein, we identified a range of applications or solutions that are of crucial importance to us:

➢ Stock Management: In fulfilling contract-orders, it is critically important for producers to embrace yield-monitoring practices to achieve the volumes that are required to meet the shipment-schedules they commit to – if not, have contingency arrangements in place to draw on alternative production-sources.

➢ Crop Integrity: Our national quality-assurance standards go a long way, but there are specific applications that trace the origins of grains being delivered all the way back to the seeds, through the entire growing, harvesting, handling, and shipping chain – we intend to embrace this more rigorous IT-approach.

➢ Sampling-Testing: Many corporate buyers require sample-tests of the grains they are going to receive before they are shipped. Our accredited labs are set up for this purpose, but now there are IT solutions that tackle this challenge at source, to transmit the results in advance of shipment for buyer-approval.

➢ Contract Management: In fulfilling advance-orders, particularly sustained ones, we strongly recommend use of contract-management and progress-reporting practices. There are many SW-tools for this purpose, but the most appropriate ones must be selected and adapted to specific requirements of grain-contracts.

We have already identified solution-partners in each of these domains, and we will promote them using our standard collaboration tools as we move forward:

➢ Vendor Profiles: We will select strategic-partners and post them on our portal, with application-profiles that focus on the value they add to our mission.

➢ Case Studies: As in other IT-MIS domains, we will collaborate with vendors to showcase their applications in the benefits they bring to the grain export chain.

➢ Trade Mall: Vendors can have their own *virtual-stores* to promote themselves, but we will also incorporate these solution themes into our *virtual-pavilions*.