Strategis Partners

Using Data in Agri-Foods

e-News - January 2018 Issue

Data Analytics as a competitive weapon

This newsletter focuses on how producers, processors and distributors of foods and fibre can take advantage of new developments in Data Science and Decision Technologies to improve every aspect of agri-value chain operations – make better capital decisions, design more efficient supply chains, and deliver more customer value through synchronised planning.

Agri-foods is a very competitive sector. There is no scope for error in strategic and operational decision-making. That is why we expect to see value accruing to leading users of big data and decision technologies at the expense of laggards, a trend for which the emerging evidence is growing stronger.

In 2018, Strategis Partners is advising on three themes for companies operating across the agri-foods value chain:

- understanding markets and customers through analytics
- managing weather and climate risks, and
- improving supply chain performance.

If you are interested in finding out more about how companies are achieving these gains, please do not hesitate to contact me.

By Jay Horton,
Founder and Managing Director

About Strategis Partners

Strategis Partners is a management consultancy and executive development firm operating in Australia and across South East Asia. The Firm works with clients in agriculture, food & beverage manufacturing, supply chain - logistics, retail distribution industries.

Contact us:

Level 57, MLC Centre
19-29 Martin Place
Sydney, NSW 2000

Phone: +612 9238 6886
www.strategispartners.com.au

Agri-Food Scenarios

The decade of disruption and opportunity ahead

Picture, for a moment, Australia's agriculture in the year 2024. It is a future of larger, leaner, more productive agri-food operations, but also far more technologically advanced operations.

Across Australia's 100,000 plus farms, we will notice a raft of weird and wonderful technologies:

An Internet of Living Things is at work in cyberspace. Across Australia's 100,000 farms, potentially tens of millions of new devices – low-cost sensors and actuators – will connect animals, crops and fields in networks for monitoring, process optimisation and decision making.

Next-generation genomics, advancing at a rate even faster than computer processing power, will usher in new food varieties; for example, tailored foods for Asia's taste buds, for treating diseases – or for improving yields.

Advanced robots and autonomous systems are tending fields, harvesting crops, looking after animals.

The Cloud holds a vast store of data and cheap computing power to support agri-supply chains. Big data accompanies foodstuffs on their way to the dinner table, ensuring quality and better matching of supply to demand.

Transforming the way we farm and market foods

Leading farm enterprises will be producing each day, potentially terabytes (millions of megabytes) of image and operational data. An increasingly valuable output of agri-enterprises will be raw data that can be transformed to add more value to the agri-product.

With the massive amounts of data being generated across the entire supply chain, it will seem like an overwhelming task to turn that data into insight and better decisions

Seven signs of agri-business model disruption

Many companies suffer from the "data rich - information poor - decision deficient" syndrome

Management may have all the raw data they will ever need stored on servers or in the Cloud. But unless that data can be interpreted and integrated effectively into decision-making, it is of little use.

Present-day methods of food chain management, planning and decision-making will come under increasing strain as new competitive pressures mount. The democratisation of digital technology is advancing, driven by falling computing costs and open source software. Barriers to entry are reducing, allowing entrepreneurs and other new competitors to disrupt established agri-markets.

Here are seven signs indicating that existing business models in your sector are being disrupted:

1. Your product and marketing advantage is eroding. Competitors who are early adopters of these new technologies are gaining quality, cost, and speed advantages

2. Your enterprise is struggling to contain rising costs of production

3. You're having coordination problems in matching supply with demand

4. Customers' expectations on service and product quality are rising

5. You're increasingly troubled by risk and volatility

6. Your enterprise is not exploiting the increasing volume and scope of data it is generating

7. You're facing complex decisions about why, where, and how much to invest in new technologies.

A new basis for competition and growth

As we enter an era of ultra-cheap computing, more powerful algorithms, and an ocean of data to exploit, the challenge is to make better strategic and operational decisions, faster, and consequently, increase business performance in the midst of tough competition.

Far-sighted companies are now embracing new decision tools such as:

- **Optimisation** to redesign complex supply chain systems and processes to improve their performance in terms of cost, speed, and /or reliability. Examples of applications include improving operational processes such as scheduling, transport routing, and making strategic investment decisions. Strategis Partners use a suite of tools to assist Clients on supply chain restructuring, facilities location, and product range strategy.

- **Data mining** to extract patterns from large datasets for risk management and decision-making. Consultants at Strategis Partners analyse data using tools such as Python and R, both open source programming languages for computing, statistics and graphics, to determine how performance in food systems can be improved.

- **Simulation** to reproduce in digital form the behaviour of complex production systems, for forecasting and scenario planning. Monte Carlo simulation, for example, is a class of algorithms that rely on repeated random sampling, that is, running thousands of simulations, each based on different assumptions. One application developed by Strategis Partners assesses the likelihood of a large multi-farm food producer to meet financial targets, given uncertainties about crop yields, output prices and the success of various operational initiatives.

Gain further insight ...

A wave of tech change is heading towards the agri-foods sector. Executives must respond to the signs that indicate their business is being disrupted, and devise the company's new plan to win.

Agribusiness and the packaged foods sectors face a raft of complex challenges. Customers, competitors and technology are moving. How to prepare for the changes ahead in agri-foods? Read more.

Case Study in livestock markets

One of Strategis Partners' projects has led to a new understanding of how livestock markets across Australia actually work:

- Traditional economic models of commodity markets follow the law of one price, which states: "In the absence of transportation costs and trade barriers, identical goods must sell at the same price in all markets." But this "law" is an over-simplification that emerged in a past era of data scarcity.

- Today the use of big data and advanced analytics reveal that "the law of one price" does not hold everywhere and all the time across livestock markets.

- Location matters. A large volume of livestock assortments for sale matters also. This means that producers can get better prices for their stock by investing in market and price analytics.