Animal Health Market Forecasting in an Increasingly Complex, Competitive and Interconnected World

The animal health industry operates within an increasingly complex, dynamic and competitive external environment. This is especially true within food animal markets where animal agriculture is undergoing a period of rapid change driven by unprecedented increases in consumer demand for animal protein across the globe; increasing requirements for food safety and quality; volatility in production input costs; evolving animal disease situations; and globalising animal protein trade. Consumer incomes in emerging and developing countries are growing at a faster rate than advanced countries, and income-driven changes to dietary preferences are having a profound effect on animal protein consumption patterns. Consequently, animal health markets are evolving faster than animal health companies can respond, leading to unmet needs and missed opportunities. This new situation demands a more predictive, longer-term approach to strategic planning and forecasting than has traditionally been used.

Why are medium- to long-range forecasts needed?
Medium- to long-range forecasting and strategic planning are vital skills and processes that can determine success or failure of an organisation in an increasingly complex, dynamic and competitive global animal health market. While strategic planning and forecasting are amongst the greatest challenges for animal health executives today, Henri Poincaré’s adage from a century ago is still relevant today: “It is far better to foresee even without certainty than not to foresee at all.”

Medium- to long-range forecasts are critical support tools for research and development and corporate development which rely on a longer-term understanding of market dynamics and longer-term trends.

Budgeting, Operational and Strategic Planning
All companies undertake an annual budgeting cycle to determine short-term financial objectives and sales targets that typically extrapolate trends and account for recent news and events. Many companies also use this process to undertake operational planning for up to three years, which typically includes anticipated new products and technologies. However, operational planning is predominantly focused on internal dependencies with less regard for external influences and longer-term trends. Medium- to long-range forecasting is increasingly important, given that product development timelines are lengthening, costs and risks are increasing, and being first to market is an increasingly important success factor and point of differentiation for company portfolios that are increasingly undifferentiated due to the widespread availability of branded generics.

Key challenges for medium- to long-range forecasting include:

- The collation of multiple, isolated forecasts submitted by each subsidiary can be fundamentally flawed due to increasing globalisation of animal protein production and trade;
- Local managers, who are focused on excellence in operational execution and delivering financial targets, cannot effectively monitor the complexities of animal protein supply and demand outside their local geographic responsibilities;
- Companies are focusing ever more resources on short-term operational execution at the expense of external monitoring and long-range forecasting;
- Emerging market potential needs to be quantified based on fundamental market drivers;

Fig 1. Typical Planning Cycle
• Large variations in health spend per animal accentuates the impact of globalising animal protein production;
• Will animal protein demand in emerging markets be satisfied with domestic production or increased imports from developed markets?

Animal Protein Demand Forecasting
Income growth will continue to drive increased consumption of animal protein in emerging and developing countries, whilst in advanced countries consumers are demanding ever more stringent standards of animal welfare and food safety, which in turn is influencing retailer and processor standards and specifications. Interestingly, animal protein consumption and production is already growing almost twice as fast in non-OECD countries as OECD countries, and this trend will continue.

Animal protein demand forecasting on a country-by-country basis is a combination of long-range per capita consumption and human population trends overlaid with short-term volatility caused by numerous factors.

Per capita animal protein consumption is driven by evolving preferences and eating habits, disposable incomes, new products, and access to and availability of animal proteins. While these factors are complex, studies have demonstrated a relationship between income and animal protein consumption for individual country markets and these demand elasticities can be used as a backbone for animal protein demand forecasting.

Medium- to long-range animal protein consumption data are critical in developing demand-driven production forecasts.

Production Forecasting
Animal protein production is ultimately governed by animal protein consumption, however, varying production life-cycles, government policies, volatile relative commodity prices, and trade and disease issues can affect the transmission and response to these market signals.

Animal agriculture is amongst the most regulated industries and is subject to intense political, regulatory and environmental scrutiny, as well as changes in consumer, processor and retailer attitudes and behaviours, which can influence supply and demand dynamics.

In addition, animal protein production is beholden to external factors beyond the producer’s control, such as disease outbreaks, weather events and climate change, natural disasters, trade disputes and policy issues, which can materialise as short-term disruptions to supply and demand.

Trade
The rapid expansion of the global trade in animal protein has fundamentally altered global agriculture by disconnecting local supply and demand constraints and barriers.

Global trade in animal protein is governed by highly complex regulations and standards required to maintain compliance, however, disputes can arise which take a long time to resolve.

In addition, trade can be temporarily disrupted by relative price movements, changes in feed costs, exchange rates and disease outbreaks, which makes short-term forecasting challenging but medium- to long-range trends prevail.

Bilateral trade agreements are being developed, e.g. TTIP, EU-Mercosur, TPP and these usually involve animal agriculture products. These free trade agreements will eventually open up more protected agricultural markets to increased competition, which is often a key source of contention.

Linking animal protein demand and supply through trade is a key determinant of production forecasting accuracy and demands complex tools and forecasting models.

Building models that simulate global animal protein trade over time allows for external factors to be accounted for while maintaining long-range fundamental trends in global trade flows, barriers and drivers.

Productivity
In recent decades, advancements in conventional technologies, such as nutrition and genetics, have contributed significantly to improvements in animal agriculture productivity, which could soon be joined by further advancements in biotechnology and information technology to accelerate productivity gains.

Forecasting Models
Despite all the complexities of global animal agriculture and animal health markets, the development of bottom-up market models can support the formation of robust medium- to long-range forecasts, which are critical success factors for animal health companies today.

The use of interconnected models for animal protein consumption, production and trade allows commodity balance sheets to be developed that account for the complexities of competing animal proteins within a country and also competition between countries for growing international animal protein demand.

However, animal protein production volumes alone are unsuitable for animal health market forecasting, as the fundamental driver of animal health market demand is animal numbers. To forecast the number of animals
requires productivity improvements in each country and each species sector to be accounted for, as it directly influences the relationship between production and animal numbers.

Animal numbers must also be adjusted for "medicalisation rates", which relates to the proportion of a population with access to animal health interventions. This is more important in emerging and developing countries where access to animal health and product inputs are increasing rapidly, while in advanced countries the vast majority of animals already have access to healthcare.

The output from a series of interconnected animal agriculture consumption, production, trade and live animal models are medium- to long-range forecasts for the number of "medicalised animals" by species in more than 230 countries.

Animal Health Market Forecasting
Distilling simplicity out of complexity is the key to successful forecasting. Market fundamentals are the number of medicalised animals and the value of healthcare inputs each animal consumes, which is the next stage of a forecasting process.

This requires extensive knowledge of historical animal health market values and trends by species and product group to identify and quantify underlying trends in demand. Unlike human healthcare where this data is readily available and easily accessible, independent historical animal health market data is challenging to source.

Using medicalised animals and total animal health market size by species and product group it is possible to derive an animal health "spend per medicalised treatable unit" segmented by product group. This is the second market fundamental input for medium- to long-range animal health market forecasting.

An intimate knowledge and understanding of the animal health market can then be applied to identify and model these market drivers over the medium to long-term. The impact of new technologies, generics, regulation and pricing all need to be considered.

By developing a series of models that connect animal agriculture and animal health together with the application of skill and experience, it is possible to build robust medium- to long-range animal health market forecasts.

Companion Animal Market Fundamentals
While there are different market drivers for food and companion animal healthcare, the fundamentals are the same; how many animals are medicalised and the average animal health spend per medicalised animal.

However, companion animal market forecasting is even more dependent on evaluating the trends in advancing medical and surgical technologies, willingness and ability to pay, diagnosis rates and product pricing.

Conclusions
While medium- to long-range forecasting is challenging, it is critical for animal health companies to plan strategies to survive and thrive in an increasingly complex and competitive market.

The availability of independent forecasts allows animal health companies to challenge their own internal assumptions and improve the quality and effectiveness of their internal strategic planning processes.

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