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Making feed formulation software better

Creating the best quality feed at the lowest cost, increasing efficiency and providing the best customer service – these are the major challenges faced by nutritionists and formulators around the world. And the main grounds for implementing feed formulation software. But is there nothing more you can expect from such a software tool?

By Bea Van Deynse, marketing manager at Adifo, Belgium

Knowledge is power. The feed industry needs to provide good, competitive products to their customers. Knowledge and service level however are the two elements that have become increasingly more important over the last couple of years.

Investments made nowadays put more and more focus on these topics. Finding a good balance between securing a company's intellectual property and sharing it with their customer base and partners is of strategic importance. Companies such as Adifo offer cloud-based tools that guarantee both security and collaboration in a very flexible way. "Our solution gives access to the IP of the feed company, without exposing too many details. The knowledge stays protected within the secured cloud platform, giving details only to authorised users," explains Karel Vervaeet, Bestmix product manager at Adifo software.

Corporate governance, compliancy and regulations

Feed formulation software is no longer just about making feed. The complexity of legislation on food safety, declaration, hazardous materials and others in an ever-globalising industry has grown stronger over the last couple of years. "This is why we are using smart labelling tools that enable users across the globe to make fully compliant labels in a completely automated process. Besides labelling, the implementation of recipe models also makes it possible to validate recipes prior to production on both internal and legal quality standards. Because we do not believe that making it yourself is by definition better, we constantly look for partnerships with specialists in the industry. A typical example is Lisam Systems SA," says Vervaeet. "Their knowledge on the declaration of hazardous materials and our knowledge on feed formulation processes guarantee our users fully compliant product declarations and safety data sheets, embedded in the formulation process, thus giving the user the ability to react on the fly, during formulation."

Dealing with volatile quality of raw materials

The follow up of the quality of raw materials is a well-known process. How to respond and decide fast and accurately on quality fluctuations is another. "We offer, for example, a software package that offers a platform that captures quality information on raw materials and transforms them into value for the formulation department. Integrating feed formulation and quality control software gives more flexibility and accuracy to really deliver the quality that was expected. We can also make sure that software is integrated with an Enterprise Resource

Planning (ERP) system, so the contract details from the purchase department, including the quality of the different contracts can be exchanged with the formulation software. For every individual contract a decision can be taken by the purchase department not only whether or not to use this contract, but also when to use this contract and at which production location. ERP no longer needs to aggregate contracts, which had proven to be a complex and error-prone process. It has become a contract by contract decision,” explains Vervaeet.

The importance of an integrated solution

Formulation software is at the heart of a company, but is not an island in the organisation. It requires and supplies information throughout the supply chain and the production process. Figure 1 shows how integrated software solutions are used in the feed industry. Although they can operate stand-alone perfectly, they have become so dependent on each other that an integrated solution is vital for a flawless operation. “When combining a feed formulation software package with ERP, it provides insight in to the entire business process of a feed company; from the intake of goods, the production of end products and the sales and financial administration up to the quality control throughout the whole chain. Through software you should manage the entire logistical flow of a feed company. Our expertise exceeds the formulation business, which helps us to set up a complete and integrated solution,” says Vervaeet.

Capitalising on big data and analytics

More and more data is captured during the feed formulation process. The global availability of the internet makes it possible to generate a real-time flow of data. So far, most of this information is used in a reactive manner. This means the information is used to amend production processes, to recalibrate equipment or to take other corrective actions. Many tools exist to visualise and manipulate this information in an understandable way. The challenge now lies in using this information not in a reactive model, but in a proactive way. Using Artificial Intelligence or machine learning software will analyse the information coming in and take proactive measures, without any user interaction.

Machine learning – some examples

Adifo is looking into ways of how machine learning can make producers work more efficiently. An example: When the temperature in a feed mill varies, the moisture loss during production could be controlled and compensated in an automated way by adding or removing the correct amount of steam. Another example: In the sales process, wouldn't it be great when the customer buys a particular item, the recommendations engine suggests additional items that are likely to be purchased together in the same transaction? Hence, this could be put into practice on an e-commerce website or when a customer calls to place an order. Applying machine learning technology on order history data could also give some insight into the buying pattern of the customer and consequently knowing when and how much he is likely to buy. This way, the production can be organised even before the orders are received. “These are just some examples that show how we are working together intensively with the feed manufacturing industry to

research how its products could make use of this “big data” and help its customers become more efficient,” explains Vervaeet.

Productivity and increased channels in communication

In the process of feed formulation, many of stakeholders are involved: the customer, the formulator, the premix company, the field advisor, the government, suppliers of raw materials, laboratories etc. Making it easy for them to collaborate is key. The traditional ways of communication such as phone or email no longer suffice. Adifo has therefore developed the online platform ‘Formulation as a Service’, which makes it possible for all stakeholders to get access to real time information and react when and where necessary. This collaboration platform makes cooperation more efficient and effective and results in a stronger awareness of the importance to share and exchange information. Users should also be informed in an automated way, by subscribing to information, a recipe, an ingredient, a product, as you would subscribe to a newsletter. The relevant information is brought to them whenever needed and users don't need to go and check at regular intervals, making the information flow more efficient.

Expect the unexpected

Managing raw material quality and their prices, optimising recipes, creating labels, communicating products to the mill are all features of a feed formulation system that have become a commodity, they are no differentiator when talking about feed formulation software. “This is why suppliers of feed formulation software always need to look ahead and provide answers and solutions to the challenges of today and tomorrow,” concludes Karel Vervaeet.

Figure 1 - How integrated software solutions are used in the feed industry.

