Helping businesses deal with the expected and the unexpected

The meat industry is constantly facing new challenges that require digital solutions. The recent coronavirus pandemic highlighted several of these, most notably the huge impact on demand, with bumper orders in retail markets and crashing sales in the food service sector.

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A comprehensive ERP system supports effective planning throughout the production process.

Nevertheless, even as more normal times are returning, businesses still have to contend with issues such as supply chain pressures, labour shortages and the need for production efficiencies in competitive just-in-time markets.

For these reasons, a comprehensive ERP system remains an essential element in helping businesses to deal successfully with both the expected and the unexpected.

Effective planning

The need for planning at short notice was one of main features of the pandemic, but such a situation is not uncommon in the meat industry.

While re-calculating raw material requirements is straightforward in principle, factors such as material lead times, line capacities and staff availability can make this planning at short notice a puzzle with many variables.

Where different products have common ingredients and share production lines and staff, increasing one product very often reduces the potential output of another.

With integrated ERP software including a good planning module, it is possible to incorporate the key productive factors - namely materials, machine time and manpower – into your plans. Drastically reducing production presents a different set of challenges, aside from the obvious human cost of potential job losses.

The main concern is how to quickly shift high value, short shelf-life raw materials.

An ERP system can highlight which materials are about to expire, giving processors time to decide what to do – produce, preserve (for example by freezing) or try to sell them raw.

Abattoirs and meat businesses with vertically integrated supply chains are very familiar with the many difficulties of matching supply to demand because the input of live animals cannot be varied in the short term.

When the livestock reaches maturity, there is a short window within which it must be killed and processed – regardless of whatever factors have caused changes in demand.

In a hot sunny week, planners might be calculating what input they need to fulfil big orders for barbecuing (a pull situation). If the weather breaks earlier than forecasted, they could be figuring out what their surplus will be so that they can tell the sales team what to shift (a push situation).

A good planning solution will be able to calculate forwards or backwards to flex and adapt in line with the market situation.

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Industrial PCs provide automated data capture on the shop floor.

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Ensuring best practice

The combination of Brexit followed by the pandemic had a marked effect on the availability of skilled labour. The situation continues to make headlines, with some manufacturers and industry associations calling for more government action to alleviate the crisis.

Nevertheless, integrating new staff into an operation can bring its own challenges. New starters are more accident-prone because they are not aware of the risks and not as skilled in handling tools or machines. Inexperienced staff may also be more inclined to ignore best practice standards, which are very often in place to ensure product safety and quality. The higher the ratio of new starters to experienced staff, the harder it is to maintain a culture and a set of standards.

ERP software can provide a solution to this problem. It allows shop floor data capture to be woven into physical production so tightly that the two operations appear seamless parts of the same task and the correct practice is locked in.

Imagine an operative physically loading a container with product and then directly scanning the fixed barcode to register the product in the container.

The data capture process has become an integral part of the production process – and is done at the right time, in real time, and only once – rather than being recorded on paper and entered later.

In another scenario, it may be best practice to manually record a sample of product temperatures every hour – as an independent corroboration of continuous chiller temperature records.

While this might take the operator only thirty seconds each time, it is human nature to avoid tasks which do not contribute to the primary objective – and anyone with a production or technical background will be familiar with the need to keep on re-enforcing these sorts of disciplines until they become habit.

With in-process QC checks, however, the temperature check can pop up, interrupting the process with a mandatory requirement to enter the temperature. That way, the system helps to support best practice.

Hardware support

The best software needs the best equipment to help to ensure its effectiveness. Industrial PCs on the shop floor can provide automated data capture in challenging industrial environments.

An industrial PC will enable companies to better manage the challenges of handling data effectively and consistently. It can deliver automated online data capture so that important information is directly captured at its origin, even in tough operating conditions such as goods receiving, on the cutting line or in refrigerated warehouses. This means production staff have immediate access to essential details and provides full transparency for decision-making.

Digitalisation can help ensure best practice by operators.

As a human-machine interface, the PC also allows the visualisation and control of processes. Vital information including traceability and batching data is captured electronically, directly at source, with no requirement for manual input with pen and paper.

This paperless data flow allows uninterrupted production processes, reduces errors, and enables cross-departmental communication.

The captured data is supplied immediately to the ERP system; equally, ERP data can be sent automatically to the PC.

In this way, it becomes an information hot spot in production, inventory and logistics, giving staff real time information. Connected to scales or silos, the machine enhances both process quality and documentation.

Making life easier

Hardware solutions continue to be developed for previously manual operations. The automation of the grading of pig carcases, for example, using an industrial vision device, delivers highly consistent results, as the error prone job of accurate probe placement is eliminated, as well as the risk of repetitive strain injuries. It also means manual data recording can be removed for more reliable and accurate results.

In addition to providing a fast and accurate assessment of the grade and market value of each carcase at the abattoir, such systems can also be used downstream for sorting carcases to optimise yields.

Equally important, all the information from the classification process is automatically archived and can be produced in customisable reports. This gives both the farmer and processor end-to-end traceability and transparency.

Maximising efficiencies

By using the latest technologies, software, hardware and people can work together more effectively.

ERP systems are able to easily integrate and communicate with existing equipment on the line; 'pick by voice' and 'pick by vision' systems can direct people to the correct area of the warehouse where lamps and digital displays on the shelf indicate the exact position of the relevant stock.

Similarly, the introduction of automation and robotics supports the effective interaction of data and goods flows.

Many meat companies have already developed ground-breaking standards in intralogistics, with automated high-bay storage and load building gantry robots operating seamlessly with people in a semi-automated picking area.

All of this is orchestrated by the ERP system, which tells the machine what to pick, sends it to the right labelling line and alerts the human picker which product they should put in the basket.

Finally, it makes sure the load is built back to front and upside down so that the last basket on the last trolley loaded onto the vehicle is the first drop of the route.

Across the supply chain

The beauty of digitisation is that integration is not restricted to the factory. The wider the connections across the entire supply chain, the greater the opportunities to improve production and respond quickly to consumer trends, changes in demand, for example due to weather conditions, or particularly favourable prices of certain meats in the market – or even the phenomenal turbulence generated by a global pandemic. ■