Helping food factories to make mindful food inspection choices

Embracing sustainability is a smart business move – especially in food production, where the effects of waste, energy consumption and resources ripple out to consumers in mainstream society, influencing their decision-making process.

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A well maintained, robust food inspection machine with a stable platform can run for 20+ years. Fortress is harnessing AI to support smarter machinery monitoring.

For Generation Z especially, environmental stewardship is especially prevalent. With millennials now making up one fourth of the planet's population, their spending power will have a marked impact on the future consumer landscape.

Characteristically, millennials value convenience. Yet, they also want to be more informed about business practices, with 81% also wanting to know the backstory of where their food has come from. Unlocking this millennial mind-set could be the key to manufacturers achieving circular economy success.

As a millennial business itself – Fortress began manufacturing in the UK in 2011 – the company's founding principles of performance, reliability, simple operation and Never Obsolete commitment continue to assist food producers the globe over to raise their sustainability game.

Choosing more sustainable production methods requires a multi-pronged approach.

With 90% of Fortress metal detectors sold to food factories, extending the lifespan of equipment and optimising Return on Investment (ROI) is one way to keep your sustainability stakeholders happy.

Many larger food producers today are finding themselves under pressure from investors to provide hard evidence of sustainable actions. It means you can not just claim to be sustainable; you have to prove and rubber stamp it.

For food factories, demonstrating, let alone quantifying sustainability, is often the greatest challenge. Even the word itself means different things to different generations, from environmentally friendly to organic, ethical to transparency. Another challenge is the split about what constitutes sustainability between consumers and industry.

This is in part due to the fact there are so many aspects to the agenda – from being eco-friendlier by reducing energy consumption and carbon footprint, to tackling the volume of food that ends up in landfill.

Since 1996, Fortress has given food manufacturers the option to update metal detectors rather than disposing of perfectly functional kit.

A lasting legacy

Electronics and industrial machines today are not designed to last forever, let alone be upgradeable. Components are glued to motherboards. Smartphones are sealed. Digital control panels are discarded when the pixel dies. The waste generated is enormous, and the ecological footprint even bigger. If thrown into a landfill, hazardous substances can leak out causing soil and water contamination. This can be harmful to wildlife and to human health.

It is estimated that the UK produced as much as 33.1 million tonnes of commercial and industrial waste in 2016. Around 80% was generated in England.

The EU's Circular Economy Action Plan points to critical raw materials as a new focus for waste policy. Waste electrical and electronic equipment (WEEE) is currently one of the EU's fastest growing waste streams – growing at 3-5% per year.

Disposing of outmoded industrial food production assets can be especially complex. It usually requires the support of specialist organisations.

Because most metal detectors have coils embedded within them, this makes it even harder to reclaim and recycle components when a machine enters the waste stream. Reassuringly, with the right maintenance, a well-built food metal detector can run for 20+ years.

Cutting edge technological solutions

Machinery innovation is not going to slow. There is always going to be faster, more efficient and cutting edge technological solutions coming to market. But that does not mean prematurely discarding perfectly functional kit because it does not comply with the latest retail inspection standards or regulations.

From the outset, all Fortress technology parts developed have been designed with backward compatibility in mind. Down to the search head, parts can be replaced with the latest greatest revision of a part, or a metal detector could even be upgraded to a newer model.

Just last year, one of the first machines ever sold by Fortress Technology's Canadian parent company was upgraded from an analogue metal detector with no digital controls to the current Stealth hardware platform.

This legacy metal detector continues to run as efficiently as the

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day it was installed in 1996. However, it now has the latest hardware and software features of the Fortress Stealth.

Reshaping the circular economy

Creating an economy that is regenerative, resilient, and fit for the long term, reinforces the Fortress philosophy. Since inception, the company has focused a significant amount of R&D effort into designing and deploying Never Obsolete metal detectors. It is now the company's unique selling point, valued by every single customer.

To help food factories shift from a 'take, make and dispose' business model, last year Fortress re-launched its flagship Phantom metal detector. Now, when future production requirements and retailer codes of practice demand it, the entry-level offering can be upgraded to include the data capture specifications and expandable I/O with the company's mid-market Stealth model.

Never Obsolete remains the company's most unique selling point, valued by customers the world over.

All 45+ Fortress and Sparc inspection machines come with a Sustainable Lifespan Guarantee, including the latest Raptor combi system launched in May 2020.

Fortress is also harnessing AI to improve predictive machinery maintenance, which a new study released recently by the Ellen MacArthur Foundation and Google suggests could wipe out inefficiencies in global supply chains.

To support flexible production and provide smarter machine monitoring, the company introduced a simple method that enables food factories to monitor the performance of an entire fleet of metal detectors.

Believed to be the first-of-its kind web-based inspection machine browser, Remote Management Software (RMS) connects multiple Fortress metal detectors by utilising machine-to-machine (M2M) communication over LAN.

An unlimited number of Fortress metal detectors can be connected wirelessly using a powerful back-end SQL to monitor activity real time via a web friendly interface. Individual and comparison reports can be generated in either PDF or Excel formats.

RMS is available as an option on all Fortress Stealth metal detectors. It is installed on the Interceptor range as standard. In keeping with Fortress's 'Never Obsolete' commitment, existing Stealth metal detectors in the field can also have software upgraded to connect with existing compatible Stealth metal detectors.

More food for thought

International initiatives like SAVE FOOD have helped to firmly place the issue of food loss on the political agenda. Across the entire value chain, there has been a concerted effort to address people's throwaway mind-set.

Roughly one third of the food produced in the world annually for human consumption gets lost or wasted – approximately 1.6 billion tons. That is enough to meet future global food needs. Arguably, food waste is where the most obvious sustainability agenda lies. The challenge right now is production processes typically focus more on optimising equipment availability and line speeds rather than implementing KPIs to measure food waste.

Excessive levels of false rejects are one area where food manufacturers can benefit from the most recent metal detector innovations.

Fortress estimates that false product rejects may add up to over £14,000 for each food line, depending on the scale of the problem.

The Interceptor range helps to tick this sustainability box by addressing the issue of product effect that is more prevalent in wet or conductive products like meat, dairy and baked bread.

Critically, false rejects do not just impact the physical waste where good food is discarded. Lower factory yield can undermine the cost-effectiveness of an entire operation, while repeated stoppages and trouble-shooting will incur unnecessary cost.

Sustainability cannot be considered on a single metric alone. However, there is much to be said, from many environmental vantage points, about postponing replacement purchases of anything, not just metal detectors. If food production facilities can keep machinery out of the waste stream and delay the additional environmental costs of making something new, that is responsible waste stewardship. It is also a big tick for every food manufacturer who is striving to achieve their sustainability goals. ■

References are available from the author on request