EVENT LEARNINGS

Automation Forum- A4E Event learnings

The third UK Automation Forum event of 2025 took place in March during the Appetite for Engineering Conference at the Manufacturing Technology Centre, Coventry. An expert panel discussed various ways to make the best use of existing and emerging technologies that food engineers should be looking at to help them increase production.

The panel of experts were from Automate UK, the Manufacturing Technology Centre, the Smart Cobotics Centre at Bristol University and Carlsberg Britvic that after a brief introduction, fielded questions from the audience of food manufacturers.

Learnings from the event included:

1. The UK Government has largely ignored the food and drink manufacturing sector, even though it is the largest in the UK – this needs to change given today's global challenges and potential supply chain risk
2. Labour shortages are a key issue for food manufacturers and more adoption of the latest technologies would be the answer going forward
3. We need to change the make do and mend culture at food firms to protect these businesses from competitors that have embraced the benefits of automation
4. Skills shortages are a major hurdle for all sizes of business, but particularly SMEs, but these are not just in operating any new technology, but also in how to specify the technology required to help a business progress
5. Short retailer contracts that food businesses have to deal with make it difficult for manufacturers to gain approval for finance to fund capital projects

UK AUTOMATION FORUM
New Progress House 34
Stafford Road Wallington,
Surrey
SM6 9AA UK

t +44 (0)20 8773 8111
e info@ukautomationforum.com
w ukautomationforum.com

The current Government is focused on what it calls high growth advanced manufacturing industries, often around sectors such as automotive, aerospace and life sciences, but there is no focus on the food industry, the UK's largest manufacturing sector. Given the situation that we face in the world today, sovereign security is becoming increasingly important which, the panel thought, includes food.

If the food supply chain breaks, the country is in trouble and therefore we need to not ignore it but be expanding food manufacturing in the UK. We need to be encouraging it; we need to make it more productive, and to do this, we need to make it easier to adopt more automation in our factories.

Trade body Automate UK member companies are heavily involved in supplying food factories with specialist technology, in both processing and packaging. However, robotics has not been adopted at anywhere near the levels of our global competitors although newer technologies such as collaborative robots are gaining some traction. There are still many barriers to the adoption of automation, but these need to be broken down if the labour shortages in the sector are going to be solved.

Another panellist felt that the future would see smaller, specialist factories working in the food and drink sector that use the latest technology to respond to the ever-changing demands made on today's food sites.

In terms of technology, and robot arms being adopted in food factories, the holy grail is dexterity. It's not easy, but work continues on developing tactile sensors for the robots, combined with AI, which will enable them to work on a much wider range of projects and food groups.

The panel were then asked why the UK lags so far behind our competitors in the robot adoption rates. Our previous policy of bringing so-called cheap labour from Eastern Europe is one factor as this allowed us to increase production in our food factories with people, not technology. The UK also has issues in terms of our overall capital investment, across all sectors. We are historically poor at investing in capital equipment generally.

Also, we are proud to keep all of our old machines running while in Germany, they are proud that they have bought new ones. This means a lot of food factories have legacy equipment that's been running for quite a long time and the focus is on keeping that running rather than investing in new equipment. But this needs to change if we are going to tackle the significant labour shortages we are facing.

The only way we are going to combat these gaping shortages is by changing our approach to

automation and robots. And culture is the biggest reason we are that far behind all the parts in the world. You only have to look at how our automotive industry fared when it didn't invest in automation in the 60s and 70s but instead continued with low-cost labour! Today, the automotive industry within the UK is almost entirely dominated by overseas manufacturers that have bought highly automated production to the UK, successfully.

We have an historic lack of desire to invest in new technologies, the historic lack of understanding of automation and the historic desire to use local labour as the solution, rather than to invest.

And this has led to the further barriers that have arisen over that period of time, like engineers not being as highly valued in the UK as elsewhere in the world. This is changing, but this attitude has resulted in a generation of people not looking at engineering or manufacturing as a potential career. Which is why we are now struggling to fill gaps - this needs to change as the average age of the manufacturing workforce is currently over 50.

So, we need to up our skills levels to see widespread adoption of automation. Until we really embrace engineering/manufacturing and encourage our younger people and even those that want to have a career change, then we're going to struggle. The age-old fear of robots taking our jobs has literally inhibited development.

The panel felt this culture exists in the UK far more than it does in other nations that have embraced automation. But UK plants with a younger workforce were often keener to adopt new technology.

One thing that UK food manufacturers should think about is that robot arms are being adopted across the world at increasing speeds; for instance, China adopted more robots in one year than many countries are using in total. But with the disruptive technologies such as AI and robot dexterity being developed, the food industry have more options than just installing traditional robots.

And hopefully, these latest advances could see the UK moving up the robot adoption scale. However, we probably need some kind of step change as while we adopt more robots, so do our competitors, and they start from a higher level. Skills will be required to deliver this change so that we have the people to buy, install and use the technology.

Traditionally, sensorisation of a robot arm has involved sensing at a distance, but if you give the robot an artificial sense of touch, then you can perform a huge range of handling tasks. This is, of course, extremely hard to achieve but after many years of work, the technology is getting cracked. The vision sensors have moved inside the robot and so moving inside the fingertips.

This is a game changer for the end effector and gripping tools. Miniaturisation is also key.

Meanwhile, the fact that retailers divide and conquer the food industry is another factor in the slow pace of technology adoption. Food manufacturers are fighting over contracts that are one year in length and if you can't deliver payback for an investment in this time, then the money won't be available.

And how do you engage SMEs who can be risk averse and financially constrained? SMEs certainly need more flexibility, and they need to be persuaded that robots are getting easier and easier to program, as skills are often a barrier for them. However, in some cases, smaller firms are more flexible, and it is often the board of directors that are harder to convince to invest.

If SMEs across non-competing sectors could come together to learn about the benefits, and share experiences with automation, then this could possibly help progress. There are lots and lots of common challenges to be addressed, and co-operation could also open the door to automation.

Also, procurement can be a bigger barrier to adoption than the actual operation of them. What we don't do very well in this country is teach people how to produce a business case, how to write a specification for what they want to buy, how to select the right kind of supplier to deliver what it is they want. This can be one of the biggest challenges we face in the UK - getting these kind of skills across to the community to minimise the risk associated with adopting new technology.

A recent event at the MTC brought together robot integrators that all said that the biggest challenge they had was working with an end user who had no idea how to engage with them, had no idea how to create a user requirement specification and had no idea about the technology they needed to answer their needs. This lack of meaningful engagement with technology providers is possibly one of the biggest skills barriers to adoption by the food industry.

But what if the 40-year-old machine is more reliable than its modern counterparts? What is the incentive to change? It's not about changing equipment because it's old, but it's about the mindset that we don't change anything. It's not about replacing reliable equipment just for the sake of it, it's about making sure that we use the latest equipment where appropriate (and that is faster and probably more energy efficient).

But what happens if you don't adapt? Everyone saw it in the car industry, which was decimated by foreign companies coming in, and this could be the future of the food industry if it doesn't

adapt. Some company from China will build a factory that will do it cheaper and better than we can do it, and they'll build it in this country and put existing firms out of business. The first dark factory for food and drink in China has already been built!

This is not just becoming a bit more efficient; it's an existential threat to the UK food manufacturing industry.

However, with new technology comes challenges in terms of maintenance and servicing as food firms no longer have the internal skills to complete these tasks. And any issues need to be rectified immediately to keep a line running, so flexibility in automation options is key. Flexibility in equipment would also help justify capital investments in the light of the short contracts offered to food manufacturers.

The more flexible and easier to redeploy and easy to adapt the new equipment is, the greater the chance of a successful business case.

But are robot arms the most sensible things for food production? It isn't necessarily about using your traditional six axis kind of a robotic arm as there are many options available today, but the panel were not keen on the new humanoid-type robots. May be think of it more as robot manipulators and the robot manipulator moves something from point A to point B, rather than just an arm, said one panellist.

So, when looking at automating tasks, focus on those that are probably the most time consuming and require the least skills to automate first, and then ensure that the operators are upskilled. It is about having the right mentality and the right approach to automating the right things, maintaining the skills within the humans at the same time as well.