THE FUTURE IS BREWING

With tech and automation quickly becoming the norm across industries, AB InBev is buckling down to get the brewing industry on track to meet the demands of the future.

By Lauren Endrody

WHEN YOU THINK OF BREWING BEER, YOU LIKELY imagine barley and hops, and not so much the tech and machinery that go into making it. But a beer is just as good as its manufacturing process, and Anheuser-Busch (AB) InBev, a global leader in beer-making, is no stranger to this.

For the last five years, the company has been upgrading its breweries to fall into step with a world that's quickly becoming more digitally savvy. This global project has been dubbed Brewery of the Future (BoTF), and AB InBev's South African Breweries (SAB) has been at the forefront of some of their most significant technological roll-outs.

We spoke to two experts at the helm of this operation in the AB InBev Africa Zone, Vernon Keys and Chris Clark, to get an exclusive glimpse into the tech they've been implementing, how this is changing the ways of work, and how they've been managing the smooth adoption of these new systems.

NEW AGE FOR ALE

The main motivation behind this endeavour is the realisation by the brewing industry that automation and tech are quickly becoming the new normal and that it's time for them to jump on the bandwagon. 'There's all this technology available and the world has moved on in the last two, three decades since we last made big investments in automation,' explains Vernon. 'As we employ younger, more tech-savvy people that grew up this way, we can't have an archaic system and expect them to adopt that; let's rather get ahead of the game, or at least be on par with what's out there.'

There was a need for an exploration into new technology and how it could assist the functioning of breweries. But you can't have new tech without proper implementation. 'In Africa, we've taken the Tech Supply programme and realised you can't just take new tech and put it into a plant, because it fundamentally changes the job description, the roles and responsibilities and the way people work. We need someone to guide and build that new way of working,' says Chris. And that's where the Brewery of the Future comes in.

Chris's role in this global project is the Africa Zone Tech Supply Manager. The Tech Supply team's job is the exploration, development and implementation of technology to support and make operations more efficient. Vernon is the BoTF Africa Zone Project Manager, and he runs a core team of seven experts who all have experience from different areas of the supply business such as brewing, packaging and technical services, and have all worked in many of the key jobs that use this new technology. They are tasked with guiding and shaping the new tech, products and tools that the Tech Supply team comes up with, and figuring out how to build them into people's jobs. The Tech

▼ The brewhouse at Newlands Brewery in Cape Town.

Supply and BoTF teams work together to deliver on the 20 to 30 projects underway across all 28 AB InBev breweries in Africa. These projects aim to integrate tech into a new way of working – 'as opposed to saying, "keep doing what you're doing and here's a new tool to make things easier for you",' as Chris puts it.

THE NUTS AND BOLTS

AB InBev has around 250 breweries globally, says Chris, and, 'one of the things that we want to achieve is to have the same applications and software, at least for the really core stuff in all the breweries, because then every brewery is generating the same data set.' So all the Zones in AB InBev come together and decide on the tech and applications that will be used for specific operations, which are then completely standardised and rolled out globally.

The AB InBev breweries' management system is called VPO (Voyager Plant Optimisation) and it's the foundation for how the breweries are run. On top of this, there are four pillars of digital applications and tech aimed at making the VPO more effective and efficient:

▼ Brewery operators stationed in the Packaging Control Tower gather for a meeting at Alrode Brewery in Gauteng. (Alrode is one of AB InBev's lighthouse breweries.)

1. Connected Brewery: This is the digital infrastructure of the brewery, such as providing employees with tablets and the installation of networks, digital workstations, WiFi, virtual servers and hosting environments. Basically, it's the digital foundation for people and a connected factory.

2. Managed Brewery: This includes the digital tools that are used to manage the production process.
- The main system here is **MES** (manufacturing execution system), which tracks everything from materials, production, products, performance, processes and quality. This ensures that every batch meets all the specs and quality standards.
- PTS is another tool they use that is linked with the MES. It's a database of all the product specifications – almost like a recipe book containing the exact specifications for every step of the production process. Executed through the MES, this ensures that, whether you're drinking a Budweiser in St Louis, Missouri, or in St Lucia, KwaZulu-Natal, it will have the same taste.

3. Smart Brewery: Yes, even breweries need to be smarter in this day and age. One of the biggest developments in this category is the roll-out of smart maintenance systems.

- An example of this is smart sensors that are installed on machinery and equipment, which flag problems and potential failures before they even happen. This triggers a notification to those responsible at the plant to go and investigate and, as Vernon says, it eliminates the need to perform a spot check once every few weeks and allows AB InBev to take a more proactive rather than reactive approach to maintenance.

4. Mobile Brewery: Finally, the Mobile Brewery is essentially the digital tools used in the field to support VPO, workforce productivity and capability.
- There's the **Mobile Maintenance App**, which allows technicians to do all their work on a tablet and effectively converts the maintenance schedule from being paper-based to digital, so starting and ending jobs, and requesting spares becomes instant and more efficient.
- On the topic of spares, there's the **MRO** (maintenance, repair and operations) **Optimisation** system, which checks how many spares are in stock and can run algorithms to indicate how many spares are really necessary to be ordered, ultimately reducing the brewery's working capital.
- **Problem Terminator** is a proudly South African tool that was custom-built for the specific needs of the local breweries to improve the way they were handling and solving problems. It's designed to ensure that any problem that occurs is solved at its root cause to ensure it never happens again. Problem Terminator was piloted here and has now been rolled out to other AB InBev breweries globally.

- Skills are critical to this new way of work. A special system is used to track each individual's skills acquisition process, which encourages the growth potential of all AB InBev employees. As Chris says, it allows you to see 'where each employee is on their skills journey to, first of all, be competent – which is the kind of minimum requirement – and then work through the various levels of their job to become more advanced, and essentially were never experts in their field.'
- Linked to the skills tool is a knowledge database of SOPs (standard operating procedures) and best practices. 'If you need to know how to do something, you can go in there and sort of google what you need to know. And it'll pull up the full procedure of how to do a specific task,' explains Chris. Originally, this was in the form of physical documents that sat on a shelf somewhere and were never updated. Now, with this system, procedures are constantly updated with improvements recommended by whoever is working on them. It's a living, evolving database of knowledge.
- Finally, 'Anyone these days, if you want to know how to do something, you go on to YouTube; you don't go find a document that tells you how to do it,' says Chris. So AB InBev is looking to incorporate a cutting-edge AI-powered learning platform that gives you the ability to create videos, which can easily demonstrate to staff how to do something and how things work.

▶ Fermentation tanks at Alrode Brewery in Gauteng.
▼ Water tanks (disguised as giant beer cans) at Alrode Brewery in Gauteng, storing water that's used in the brewing process.
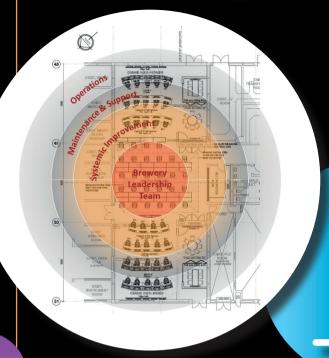
AT THE HEART OF IT

'With linking everything together, the right equipment and processes, and giving people easy access, the next logical step was to integrate, to bring people together in an organised environment,' Vernon explains. The answer to this was introducing central control towers into breweries. This concept puts all the right people in one space, with the brewery leadership team at the centre, surrounded by maintenance and support, and the plant operators directly adjacent to them on the front line.

Previously, people were scattered all over the brewery premises, which easily caused a breakdown in communication, and Chris says they often found that operators were living with issues because that is just the way things were. 'People don't have the sort of informality and ability to just lean over and ask for help and speak to people [like they do in a normal business setting]. So we've always known it's a concept that works – we just never applied it to the breweries [until now, that is],' explains Chris.

They've already implemented this idea in two of their breweries – Alrode Brewery in Joburg and Ibhayi Brewery in Gqeberha (formerly known as Port Elizabeth) – and the plan is to roll it out to about 60 per cent of the breweries across Africa, in terms of building an entirely new infrastructure. For the rest of the breweries, their current infrastructure will simply be adapted to get the same outcome. An example of this is Newlands Brewery in Cape Town, whose buildings are basically national monuments. AB InBev plans to build a central control tower there next year, but due to bureaucracy challenges, they had to come up with specialised designs that adhered to all the building constraints and that made sense in that instance. Breweries such as this, says Vernon, 'are just small enough that we could get to the concept without actually breaking down walls.'

'A lot of AB InBev breweries are catching up and building the technology, the foundation,' says Chris. 'In South Africa, we had a really good foundation to start with as automation has long been a key factor

for SAB. So we have been quite quick to implement a lot of this technology on top of it.' Of all the AB InBev breweries in the world, Ibhayi Brewery was the second to implement this type of state-of-the-art technology and put all the applications in one place. It's one of AB InBev's six 'lighthouse breweries' across the world. The goal of these breweries is to demonstrate in various ways what you can do with the new tech out there. They're all at different stages and have varying strategies on how they implement the tech based on the local context and focus areas in each zone. But they are constantly collaborating around the world to see what can be shared and learned.

The local BoTF project is taking a much more holistic approach to incorporating the future with the present and combining two sides. First, the digital side – connecting machines and processes, making it easier to extract valuable information from data sources and turning it into a useful tool that supports the ways of work within the company. And second, the human side – how employees interact with the tech, and the ability to modernise, enable and encourage future ways of working and learning. 'It's an AB InBev principle that our greatest strength is our people. It's our aim to use technology to support and enhance them. In South Africa, we've said, let's really build this foundation and get that and the way of working integrated. And that is what we are trying to prove and build out,' Chris concludes. **PM**

▲ The floorplan of a typical central control tower, implemented in AB InBev's lighthouse breweries.
◄ An aerial view of Ibhayi Brewery in Gqeberha (Port Elizabeth), with solar panels powering much of the brewery's energy needs.