Artificial intelligence in operational technology

Sector focus: FMCG and luxury goods

The FMCG and luxury goods industries both face challenges around input costs, changing consumer tastes and supply chain fragility. To help overcome these challenges, companies are investing in AI across manufacturing and the supply chain.

Supply chain disruptions, rapidly changing consumer tastes, and increasing raw material costs affect both the FMCG and luxury goods industries. While the FMCG industry struggles to deal with these challenges and maintain its margin in the face of aggressive competitors, the luxury goods industry also faces its own margin pressures as the market softens in key markets, such as China.

Meeting challenges with AI in OT

To meet these challenges, the FMCG and luxury goods industries are looking for optimization opportunities across the entire organization. Increasing the resilience of production is vital in all industries, and AI can reduce unplanned downtime and mitigate the impact of any supply chain disruption. AI also plays a key role in ensuring the quality and traceability of products, which is a key focus for luxury goods, and machine learning can help optimize processes across manufacturing.

The first step in bringing AI into the OT environment is to integrate IT and OT systems. This is already happening widely. In our manufacturing survey carried out by GlobalData, FMCG and luxury goods manufacturers reported high levels of IT/OT integration, with 84% of respondents having made significant progress with full or partial integration.

Rapid progress in AI/GenAI

Our survey also found that AI/ML is already deployed in FMCG and luxury goods manufacturing OT environments by 33% of our respondents, with a further 57% reporting pilot projects or plans to deploy the technology within the next 12 months. In addition, around 62% of FMCG and luxury goods manufacturers have deployed or are piloting GenAI, with just 5% of respondents having no GenAI plans.

This push towards AI in OT is backed by the FMCG and luxury goods manufacturing C-suite, with 62% executives saying it is either “essential” or “very important”. Like most other sectors, this initiative is being led by the IT department, as part of an IT/OT convergence strategy.

AI in OT benefits

In terms of identified AI benefits, the top three chosen by FMCG and luxury goods manufacturing executives in our survey are improved productivity, improved product quality and greater efficiency. Reduced equipment downtime was less of a priority for luxury goods manufacturing, which could reflect the role of handmade products in their supply chain.

AI in OT use cases

The FMCG and luxury goods industry is deploying a wide range of AI and GenAI use cases in manufacturing across the board. We look at three of the most popular: predictive maintenance, energy monitoring and traceability.

Predictive maintenance

Consumer giant PepsiCo has been deploying AI in its factories worldwide to help reduce factory downtime. It uses sensors across the factory floor to train AI models on audio and vibration data to detect faults such as conveyor belts or bearings wearing out. “We have today over 300 million hours of machines that we’ve analyzed and monitored, and we can leverage all this data to create algorithms that know how to pinpoint specific patterns of different malfunctions,” Augury chief executive, Saar Yoskovitz told the BBC[1]. This information allows PepsiCo to get insights into machine health and schedule maintenance before any failure occurs.

Energy monitoring

Unilever is using AI to optimize its energy consumption across its factories in India. It has deployed a platform called Clever Energy that delivers real-time insights into energy use. The company says that the technology has allowed it to reduce energy costs by 5-6% across its facilities[2]. The platform uses a AI/ML framework to monitor energy demand and usage patterns so that it can detect and escalate anomalies. It can monitor energy consumption from various infrastructure including legacy machines and adapt quickly to new patterns in consumption, weather and occupancy. Unilever can adjust settings for key equipment such as boilers and compressors to optimize energy use in real time.

Traceability

Counterfeiting is a significant challenge for the luxury goods industry, with the fake luxury goods market worth $1.7 trillion[3]. This not only affects profits but also brand reputation and consumer trust. As such, traceability is a key priority and technology plays a key role. AI and machine learning can detect anomalies that identify products as fake to stop them being sold[4]. It also plays a part in capturing data at the manufacturing stage. For example, diamond producer Sarine uses AI to create custom rough-to-polished verifiable traceability reports[5]. This can be uploaded to blockchain platforms such as Aura[6] to ensure the diamond’s provenance, which is essential in the battle against diamonds from war zones.

Overcoming AI challenges

FMCG and luxury goods manufacturing executives have identified several challenges holding back the broader adoption of AI within the OT environment. The top three were lack of AI skills, budget constraints, and insufficient data quality and availability. Budget constraints are a particular issue in the FMCG industry, which suffers from margin pressures and market volatility.

To help them overcome issues around skills, many FMCG and luxury goods manufacturers are turning to third-party assistance. The survey found that help was sought across the board, with the three most popular requests for assistance being improving data management, establishing responsible AI best practices, and developing an AI roadmap.

Focus on digital infrastructure

Digital infrastructure plays a key role in enabling AI in OT projects, with foundational technologies such as networks, cloud and security helping drive the convergence of IT and OT. Our survey found that 90% of FMCG and luxury goods manufacturing respondents in our survey said they had the requisite IT infrastructure fully or partially in place for deploying AI in OT. Concerns over cybersecurity and legacy equipment dominated among those who didn't.

These worries are shared with many other industries. Manufacturers are increasingly the target of cyberattacks, which can shut down operations or steal business-critical information. Downtime is so damaging to business that ensuring resilience is essential, particularly in the fast-moving FMCG business, where missing key dates like Black Friday can have a serious financial impact. As such, upgrading OT security is an investment priority for 69% of our FMCG and luxury goods manufacturers respondents as part of the push to AI on OT.

Connectivity is vital for the success of AI in OT because the processing of data is largely carried out in the cloud. However, the FMCG and luxury goods manufacturing industries are increasingly looking to edge computing to bring processing closer to the factory, with 78% of respondents either using it or planning to use it within 12 months as part of their IT/OT strategy.

Why Orange Business

Orange Business can help you take advantage of these AI opportunities and support you in your data quality, integration, and infrastructure requirements.

We have a unique skill set as a global integrator, communications operator, and service provider and genuine industrial experience. Our individual approach is designed to make your business outcomes a reality. Our consultants have extensive FMCG and luxury goods manufacturing industry experience and are supported by best-in-class partner ecosystems.

We can answer your transformation challenges at every stage of the data journey using a secure, scalable, flexible approach. With our business approach, methodology, and skills, we will work closely with you to outline business goals, organize efficient and secure data sharing, and accelerate innovation.

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1. https://www.bbc.co.uk/news/technology-67144713
2. https://www.hul.co.in/news/2025/can-factories-run-entirely-on-renewable energy/
3. https://www.forbes.com/sites/cassellferere/2025/01/05/entrupy-battles counterfeiting-as-luxury-dupes-become-ubiquitous/
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