Lube 2025

THE EUROPEAN LUBRICANTS INDUSTRY MAGAZINE

AI ISSUE December 2025

The official journal of UEIL

Artificial intelligence special issue

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ISSN 1744-5418

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AI ISSUE December 2025

Editor's introduction

Artificial Intelligence is no longer a distant promise, it is here, reshaping how industries think, plan, and operate. From predictive maintenance and smart manufacturing to advanced R&D and customer engagement, AI has already begun to influence the lubricants sector in profound ways.

In this special issue of Lube Magazine, we explore the opportunities and challenges that artificial intelligence presents to our industry. For some, AI represents a powerful new tool to unlock efficiency, optimise supply chains, and accelerate product development. For others, it raises critical questions: How will human expertise remain at the heart of decision-making? How do we ensure transparency, responsibility, and trust in algorithms?

Our contributors offer fresh insights into what AI can and cannot do. You'll find case studies from companies already trialling AI-driven solutions, explorations of how machine learning might speed up additive formulation, and thoughtful perspectives on the ethical, legal, and workforce implications of this technology.

This issue is not about hype. It is about reality: where AI is already making an impact today, and where it may take us tomorrow. As ever, our mission at Lube Magazine is to equip our readers with the knowledge and perspective to adapt, innovate, and thrive in a changing landscape.

Artificial intelligence will not replace the lubricants industry's ingenuity, expertise, or human judgement, but it will change how we apply them. We hope this edition helps you to better understand that change, and perhaps to see how it might benefit your own organisation.

***Tina Reading**, editor@ukla.org.uk*

AI and the lubricants industry: Optimism, barriers, and the road ahead

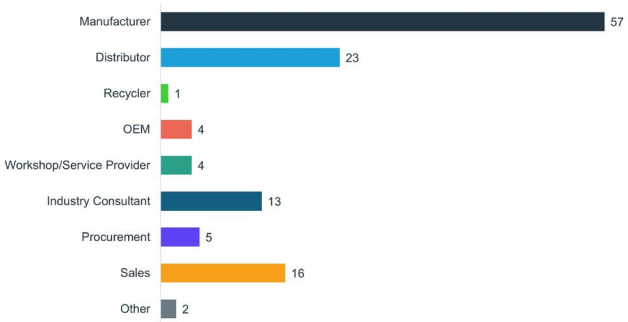
Max Marioni,
Project Lead,
Kline

Is AI going to transform the lubricants industry or is it going to slip by?

There's been a lot of grandiose talk on the transformational potential of Artificial intelligence. However, do those promises outweigh the costs for the lubricants sector? Is there enough real-world application to justify the investment? These questions are not unique to the lubricants industry. Manufacturing, chemicals, and even service industries are facing the same debates.

To explore this, Kline & Company partnered with the UK Lubricants Association (UKLA) to survey professionals across global lubricant manufacturers, distributors, consultants, and service providers. The goal was to capture sentiment, readiness, and challenges around AI adoption.

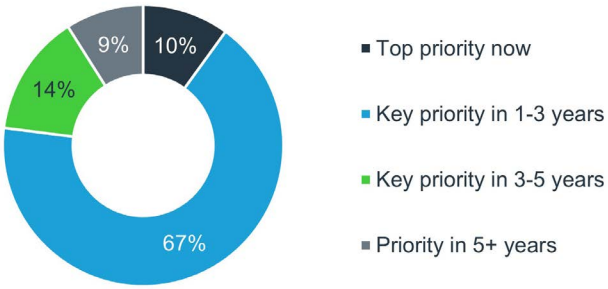
What does the company you represent do in the lubricants industry?



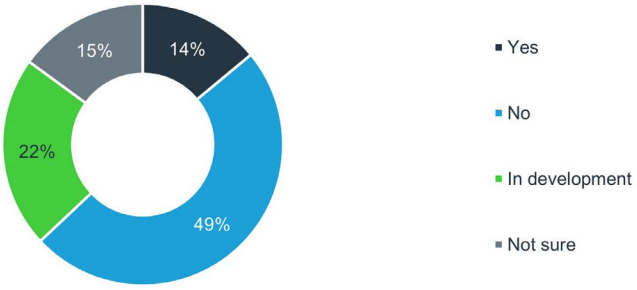
The responses reveal a sector split on the role that AI can play. Some are optimistic, while others are more cautious, and a third cohort are dismissive. As one respondent put it, the speed of adoption elsewhere has been "frightening", while another predicted "huge changes" ahead. For others, AI is still "just an upgraded search engine". These contrasting views set the tone for a nuanced discussion about AI readiness.

Strategic intent vs. practical reality

How important is AI to your business?



Does your company have a documented AI strategy?



AI in the lubricants industry has entered the strategic conversation, with 77% of respondents seeing AI as a business priority within one to three years. This signals a shift toward digital enablement and smarter operations. Yet execution lags behind, with only 14% saying that they have a documented AI strategy.

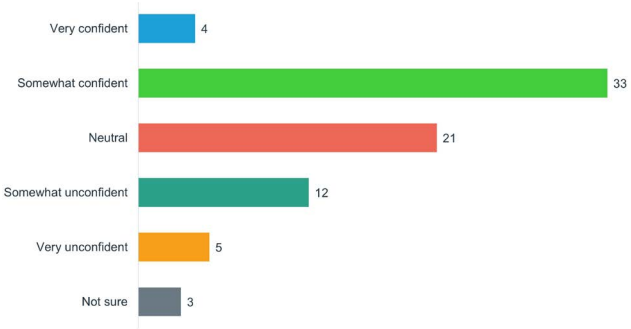
Fragmentation compounds the challenge. While some organisations have centralised strategies, many respondents describe dispersed efforts, with departments acting independently. This mismatch extends to confidence. individuals often feel ready, but organisational structures and processes do not. Employees experiment with AI tools for marketing or analytics, while companies struggle to embed AI institutionally.

Conflicting opinions and industry tensions

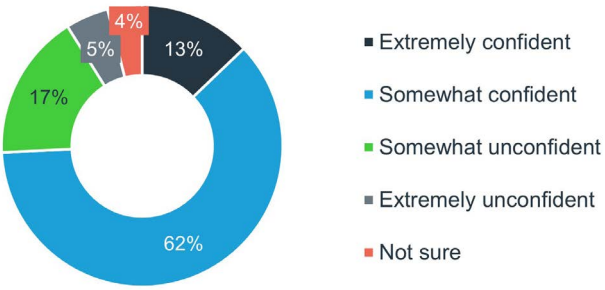
The survey uncovers several binaries shaping the industry's AI narrative:

- **Confidence vs. capability**

How confident are employees in using AI tools at your organisation?

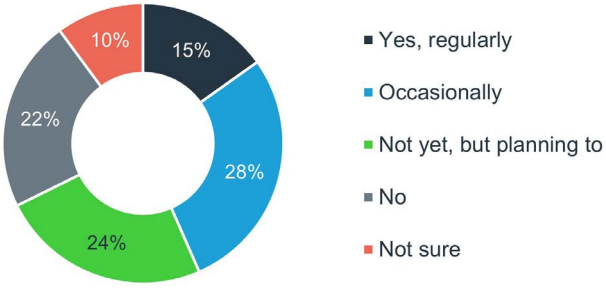


How confident are you in your understanding of AI?



While 79% of professionals feel personally somewhat or extremely confident about AI, only 47% believe their workforce is equipped to use AI tools effectively.

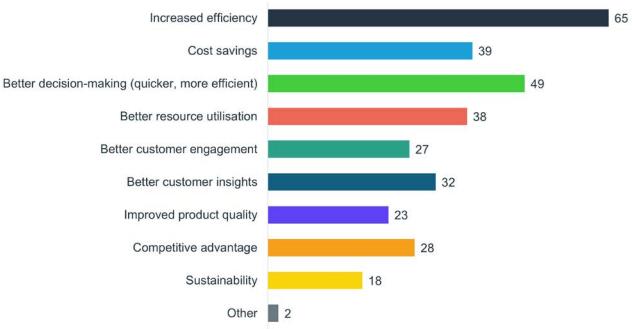
Does your company offer AI training or career development opportunities?



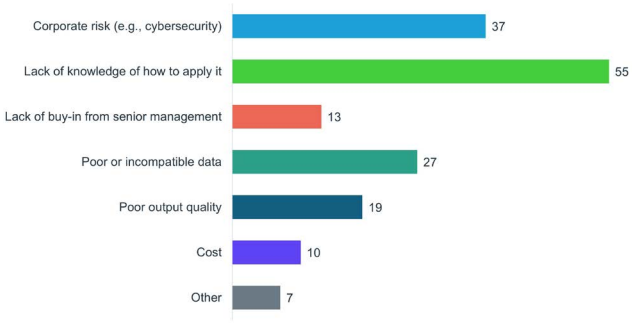
Training remains inconsistent, just 15% reported regular AI-related enablement.

- **Benefits vs. barriers**

What benefits has AI bought or do you expect? (Select all that apply)



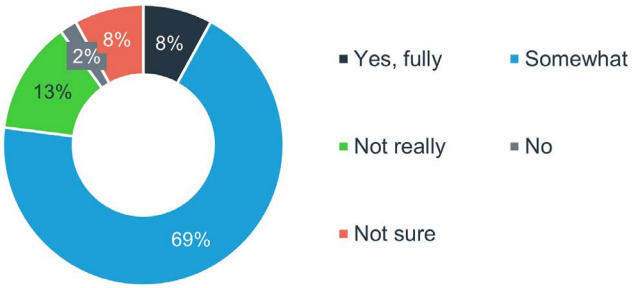
What barriers have you faced in implementing AI? (Select all that apply)



Efficiency gains and faster decision-making dominate perceived benefits. Respondents cite improved resource utilisation, better customer insights, and enhanced product development.

But barriers loom large. The top of these is the lack of skilled staff (26%), followed by high implementation costs (23%), and cybersecurity concerns (20%). These echo broader debates about AI's applicability beyond administrative or marketing functions.

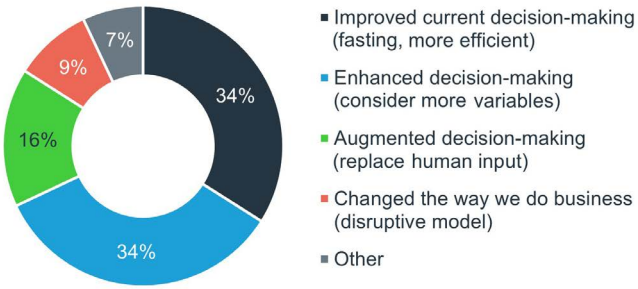
- **Trust vs. scepticism**



Concerns about data quality and reliability persist. Over 15% of respondents question whether AI outputs can be trusted, fearing over-reliance on technology and poor or incompatible data.

- **Disruption vs. Risk**

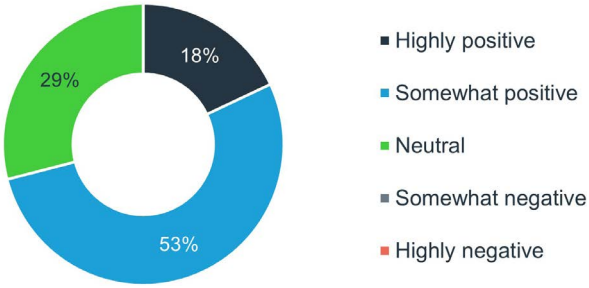
How has AI improved your business? (Select all that apply)



For some, AI signals competitive advantage and innovation. For others, it raises alarms about job displacement, intellectual property, and governance.

- **Early adoption vs. wait-and-see**

How would you describe the impact of AI on your operations so far?



A minority are pushing ahead with implementation, but most remain cautious, waiting for clearer ROI and more robust solutions.

Current and future applications of AI

Overall, AI adoption is not too bad in the lubricants industry compared to other industrial based industries.

The majority of respondents stated that most early AI applications are confined to commercial functions such as sales and marketing analytics, customer engagement tools, and chatbots that can improve customer experience through personalised engagement.

Operational applications, such as predictive maintenance, logistics optimisation, and quality control were also cited as areas of actual or potential suitability for AI-driven technology.

However, technical domains, including laboratory automation and research and development activities, were mentioned by only a minority of respondents as being currently for AI application. AI's technology is seen as not yet being ready to tackle these challenges.

Looking ahead, as the level of AI technology matures, respondents expect AI software to interact with manufacturing hardware, enabling advanced analytics and forecasting while driving end-to-end process automation across supply chains. This is a longer-term application, and specific timeframes are hard to pin down.

Beyond efficiency gains, it is expected that AI will accelerate product development through simulation and virtual testing using digital twins (digital replicas of blending plants and laboratory systems) allowing companies to optimise formulations and predict performance without costly physical trials.

Interaction with Industry 4.0 technology could help with process automation across supply chains and accelerated product development and innovation.

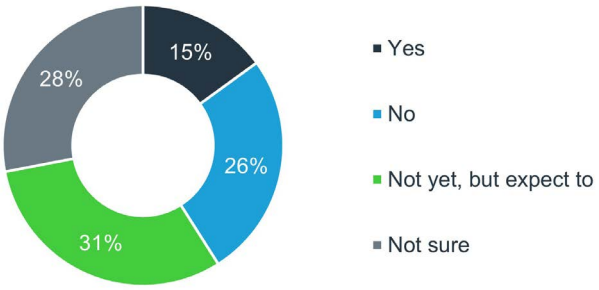
But, to turn this vision into a reality, industry voices are calling for more from their AI vendors: seamless integration, data verification, customisation for sector-specific needs, and robust technical support by professionals with the right skillset.

The road ahead: What will define success?

The lubricants industry is only just beginning on its AI journey. Despite 59% of respondents saying that they were currently using AI in some capacity, only 15% said that they had seen any measurable ROI from its adoption.

Success will depend on four key areas. These are leadership and talent investment, strategic coordination, responsible deployment, and clear ROI.

Have you seen measurable ROI from AI adoption?



ROI may be the most attractive area to focus on, as without provable returns on use, it will be hard to justify investment. A key question is what cost AI's transformational possibilities will come at. If it is too high a price, then AI will not make any real inroads into the lubricants industry.

However, before you get to ROI, you need to bring your people and your processes along with you. The first step to focus on is change management. If you fumble the transition to integrating AI, then any chance of proving ROI becomes that much harder.

The industry perspective on AI

The next decade will determine whether AI becomes a defining force for competitiveness, innovation, and workforce transformation or remains a missed opportunity.

The responses to the survey reveal guarded optimism rather than uniform enthusiasm. One response envisioned AI as a catalyst for "huge changes" in operations and customer engagement. But aside from this small section of fervent believers, AI is seen as promising but not yet proven. Practical barriers, such as skills gaps, cost, trust, are what people are focusing on rather that temper ambition. As one respondent noted, "For now, it's hype… an upgraded search function."

AI's role in the lubricants industry

To some extent, what AI will be is dependent on what you see it as being capable of. This means bridging the gap not just between intent and execution, but between capacity and perception.

As Douglas Adams said about the invention of the computer, "First we thought the PC was a calculator. Then we found out how to turn numbers into letters with ASCII — and we thought it was a typewriter. Then we discovered graphics, and we thought it was a television. With the World Wide Web, we've realised it's a brochure."

If you see AI as being an upgraded search engine, then that's what you'll get, but if you want it to be more then you need to think bigger.

AI may not yet be the silver bullet, but for lubricant manufacturers willing to lead with imagination, it could become a cornerstone of competitive advantage.

klinegroup.com

From code to context: How spatial AI is powering the next leap in manufacturing

Dijam Panigrahi,
Co-founder and COO,
GridRaster Inc.

Beyond the data-driven efficiencies of Industry 4.0, a new paradigm is emerging for manufacturers across every industry: Industry 5.0. This next evolution emphasises a human-centric, resilient, and sustainable approach, calling for a more symbiotic relationship between human workers and intelligent machines.

The goal is to leverage the precision and tireless nature of automation while keeping human ingenuity, judgment, and creativity at the core of the operation. This vision promises greater flexibility, higher quality, and improved safety, yet a massive, persistent hurdle stands in the way, particularly for small to mid-sized manufacturers: the high cost and debilitating complexity of industrial robotics.

For decades, deploying and reprogramming industrial robots has been a task reserved for highly specialised, six-figure engineers. Setting up a new task, be it an inspection route or a part manipulation sequence, can take hours, days, or even weeks of meticulous, line-by-line coding and calibration. This lengthy, expensive process makes automation uneconomical for short-run production cycles or high-mix, low-volume scenarios, effectively creating a technological moat that keeps advanced automation out of reach for a vast segment of the industrial market.

However, a confluence of technologies, namely Spatial AI and Mixed Reality (XR), is poised to shatter this status quo, fundamentally changing the economics and accessibility of industrial automation and shrinking a multi-hour robotics setup to mere minutes.

The shift to "Spatial Intelligence"

The core limitation of traditional industrial robotics is a lack of real-world context. A robot knows where its own joints are, but it doesn't intuitively "know" the factory floor. It operates in a rigid, pre-programmed void. This is where the powerful combination of Artificial Intelligence and Mixed Reality steps in to create a new layer of capability known as Spatial AI.

Spatial AI goes far beyond a static digital twin. It involves creating a persistent, dynamic, and real-time map of the physical factory environment, a living digital blueprint. Mixed Reality devices, such as industrial-grade headsets or powerful tablets, use an array of cameras and sensors to rapidly ingest and process three-dimensional data from the real world. AI algorithms then process this data to understand the semantic meaning of the physical space.
This process gives the robot its crucial missing piece:

intelligence about its spatial reality. It means the robot knows where the incoming workpiece is, where the fixtures are, where the safety zone ends, and, crucially, where the human operator is standing. This real-time, persistent map allows robots to transition from operating in a structured, caged-off box to functioning intelligently and safely in the dynamic, often unpredictable environment of a real-world industrial floor. This new intelligence is the necessary foundation for truly flexible and collaborative automation.

A new mechanism for democratisation

The real breakthrough lies in how Spatial AI translates this spatial understanding into actionable robotics path planning. The industry is moving away from the paradigm of the specialist coder and toward a model of intuitive, visual guidance. This is the democratisation mechanism that promises to unleash automation.

Imagine an operator, who is an expert in their craft, but not in robotics programming, donning a simple hands-free mixed reality device or using a tablet. With the Spatial AI engine running, the operator can instantaneously map a new workspace simply by walking through it. The system then automatically identifies and understands complex, variable-geometry objects that would stump a traditional system, an aircraft wing, a large dome-shaped pressure vessel, or an oddly shaped casting.

To program an inspection task, the operator no longer needs to write code. Instead, they can simply visually point to the exact area on the physical object where the robot needs to perform an X-ray scan, a thermal inspection, or a measurement. The operator effectively "teaches" the robot by demonstrating the intent in the real world.

The Spatial AI engine instantaneously translates this visual, human-centric intent into a complete, collision-free robot path and motion plan. What once took hours of specialised coding is now accomplished in under five minutes through an intuitive visual interface. This radically simplifies the process, making advanced automation a tool for the skilled technician, not just the PhD engineer.

The Industry 5.0 Impact

The practical impact of this "5-minute setup" is immense and directly fuels the goals of Industry 5.0. By shifting the automation barrier from highly specialised code to intuitive visual guidance, manufacturers realise immediate and significant benefits.

First, it dramatically lowers the technological barrier to entry. Small and mid-sized enterprises can now justify the cost of automation because the time and expertise required for setup and changeover are negligible. This accelerates the adoption of automation across the supply chain, strengthening the resilience that Industry 5.0 demands.

Second, it profoundly improves operator safety and quality. Collaborative robots equipped with Spatial AI can safely work alongside humans because they are constantly aware of the shared workspace, dynamically adjusting their speed and path to prevent collisions. For inspection tasks, the precision of a visually guided robot exceeds human variability, leading to a consistently higher quality output and reduced rework.

Finally, and most importantly, it fosters a human-machine collaboration that elevates the role of the worker. Liberated from the monotonous, dangerous, or highly repetitive tasks, the human operator can focus on judgment, troubleshooting, and continuous process improvement, the unique skills that drive innovation and sustainability.

Spatial AI is not merely a theoretical leap in digital twin technology; it is a concrete, actionable technology that is delivering immediate, impactful change on the factory floor. By simplifying complexity and driving setup time down to minutes, this technology is the essential accelerator that makes advanced industrial automation truly accessible to all, marking the definitive arrival of the human-centric, high-efficiency world of Industry 5.0.

About The Author: Dijam Panigrahi is Co-founder and COO of GridRaster Inc., a leading provider of cloud-based platforms that power compelling high-quality digital twin experiences on mobile devices for enterprises.

www.gridraster.com

Microwave processing and AI: Breakthrough technologies

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Ensieh Modiridovom, *PhD Student, University of Texas at San Antonio*

Introduction

Disruptive technologies: Disruptive technologies are often the result of recent breakthroughs that would not have been possible just a few years earlier. Artificial intelligence is rapidly finding utility in many applications, particularly those that are science based and produce predictable results. But it becomes more difficult to benefit from the capabilities of artificial intelligence applications where the presence of artisans or human experts are required. One such area is cooking or processing products that require complex reactions. Processing grease, for example, in general is referred to as an art because beyond the mechanics of measuring and adding the ingredients, the artist grease maker takes into account many variables and adjusts the process. Variables include the ambient temperature, non-uniformity of raw material batches, size of the batch and other like parameters. In those cases, the expert grease maker relies on history and know-how to heat more gradually, for example in order to reduce foaming, or to hold the mixture longer to allow for a more complete reaction. Similarly, a master chef in the kitchen may repeatedly stir or adjust the heat based on observed vapors, texture, taste, and consistency. In this case too, if one is to merely add the ingredients from the recipe but lacks the expertise to adjust according to observation and experience, the outcome may be different.

Until the invention of microwave-based grease processing that was patented in 2012 the idea of rapidly adjusting the temperature of a large vat of grease within a fraction of a degree was deemed impractical. Now, microwave operated vessels have improved in sophistication and temperature control thus providing the breakthrough needed for incorporation of AI in the processing of products.

In this article, the concept of using an array of sensors that mimic the senses of smell and taste, to monitor and control the cooking processes is explored . Combined with AI algorithms and accurate temperature control that is possible with microwave processing, the process industry is entering a new era of AI based process control that promises more efficient, more predictable, and better produced products.

Background: The use of microwaves for processing biobased greases has been reported in several published articles by this author in the Lube Magazine. Since 2010 one grease manufacturing company in the United States has been using and continues to use microwaves for processing biobased greases. This year Patterson Industries (Canada) presented a paper at the 92nd annual meeting of the National Lubricating Grease Institute (NLGI) on the successful production

of mineral oil-based grease using microwaves as a heating source. With temperature increase of about one degree centigrade per minute, on a 500-gallon (~2 tons) batch of aluminum complex grease and 70kW microwave input, it could be considered groundbreaking development in process heating for grease. Patterson Industries' vessel (Figure 1) incorporates the use of susceptors in conjunctions with microwave to universally process products regardless of the product polarity or dielectric values. Since there is no need for a vessel jacket, a single wall kettle can be used to make products with microwave power, significantly reducing the cost of the vessel. Figure 2 shows a WAVEtek single wall vessel designed for processing liquid products and relies on circulation jets for mixing.

In general, the energy required to heat a volume of any product is the same regardless of the type of heat. But the efficiency of the delivery of heat to the product goes down when energy is converted from one form to another, and when the vessel wall has to be heated in order to heat the product. By direct excitation of product molecules to generate frictional heat within the product, wave-based heating reduces the energy waste by an estimated 50%.

Figure 1: *Microwave-operated kettle used for manufacturing grease, Source Patterson Industries Canada.*

Figure 2: *Remote magnetron head applies microwaves into the vessel. Source: WAVEtek Process Technology, LLC USA*

Wave based processes are safer because once the microwave input is stopped all heating halts. Conventional heat transfer oil-based processes require time to heat up and continue to maintain the latent heat even after the boiler is turned off. In the Patterson grease kettle, an array of temperature sensors inside the mixing arms monitors the temperature of the product and report back to the PLC, forming a closed loop. Once the desired temperature is reached the PLC ramps the microwave input down and then up as needed to hold the product at the near exact desired temperature. This practically eliminates the possibility of overshooting the exact temperature setting, thus delivering exact temperature within a fraction of a degree. The accuracy of temperature control by wave-based heating makes the process more suitable for incorporation of AI in the process.

Artificial Intelligence and Process Control

Processing products that require heating have common traits. The heat from a heating source causes an increase in temperature. During the heating process certain volatiles leave the product. The volatiles, vapors and gases are emitted with a certain intensity corresponding to the strength of heat input. During the process, certain volatiles may increase in intensity first and then gradually diminish in intensity or disappear completely.

There is ample amount of literature on sensors suitable for monitoring numerous chemical components of food and other products during heating processes. Terms such eNose and eTongue are used to refer to sensor packages that can monitor various process byproducts indicative of smell or taste. Sensors that can sense the presence of glucose or sugars in process byproduct in effect test the sweetness of a product thus falling into the category of eTongue sensors. In grease processing, the pH of the product is monitored as a means of determining the end of the reaction

when full neutralisation of acids and bases are accomplished. An eTongue comprised of a pH sensor could monitor the condensed vapors of the grease cooking process to determine the conclusion of the reaction. In general, the intensity of most reactions or cooking byproducts are proportional to the heat input of the process. In some cases, the exothermic heat of the reaction also contributes to the rise in product temperature. Understandably, saponification reactions as practiced in grease making is an exothermic process that results in heat by chemical reaction. But such chemical heat input can be calculated and filed in the process data for AI learning algorithms.

There is an ongoing effort to use the byproduct of the cooking process combined with other traditional variables such as torque in drive motors, an indicator of thickening of product, to create an intelligent processing environment. WAVEtek Process Technology that markets wave-based production vessels, has produced AI-based monitoring options that in time can reproduce desired finished products by mimicking a process as produced by a master "chef". Figure 3 shows the array of sensors presented as "eNose" that intermittently delivers a predetermined quanity of vapors to each sensor that is designed to sense and report a different chemical.

The eNose in this case contains "nostrils" with embedded tubes for delivering a minute quantity of vapor to each sensor. One tube sends the vapors through a condenser resulting in a small amount of liquid to be processed by the eTongue. In this case a pH sensor uses the liquid to determine the acidity of the product and send the results to the Ai process box. The sensor's output voltages are recorded at regular time intervals and the results are compared with the data collected on the same process from the expert cooked process. The features of the AI supported process can be described as follows:

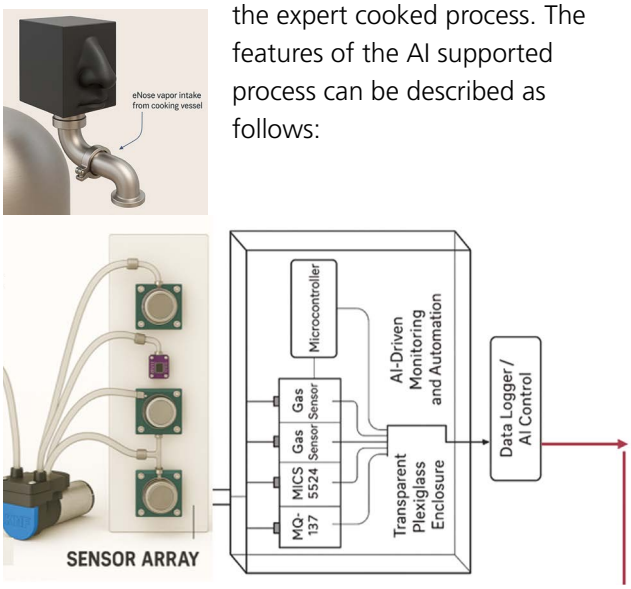

Figure 3: *Vapors from cooking vessels are drawn at regular time intervals and sent to various sensors for AI algorithm to analyze and signal the microwave controller to adjust power.*

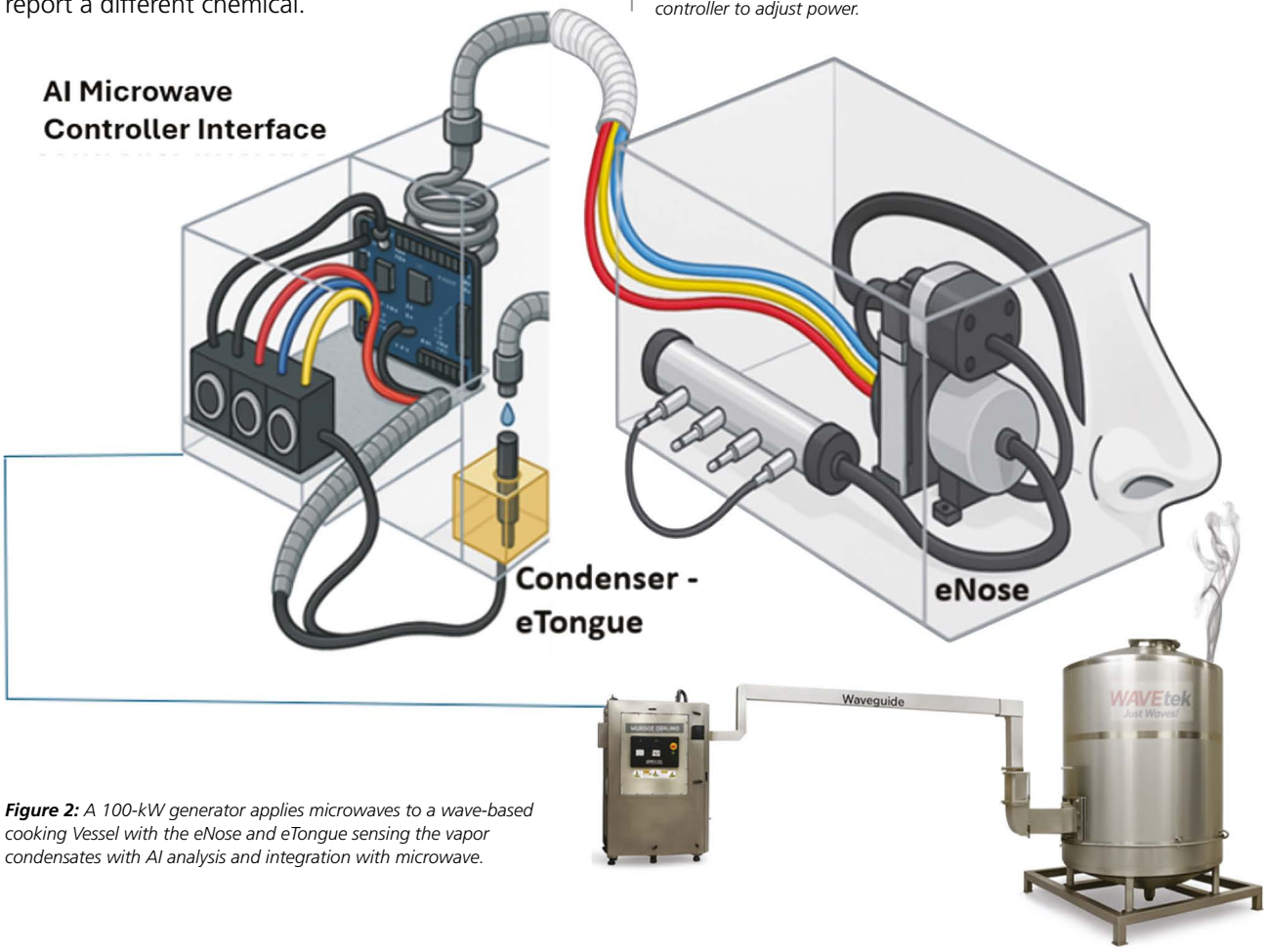

Figure 2: *A 100-kW generator applies microwaves to a wave-based cooking Vessel with the eNose and eTongue sensing the vapor condensates with AI analysis and integration with microwave.*

Figure 4: *Actual components currently produced by 3D printing – this being modified and better images will be available by midweek.*

Operation Explained

- Vapor Input Port: Draws vapor from the top of the vessel via a small-diameter hose
- Internal Sensor Array: Captures vapor signatures (NH_3, VOCs, organics) using high-sensitivity gas sensors
- Integrated Microcontroller: Digitises signals and communicates with the AI engine
- AI Feedback Loop: Matches live vapor patterns to expert-defined cooking profiles
- Microwave Power Output Signal: Sends dynamic control signals to the microwave generator to adjust heating in real-time

AI interpretation of sensor signal

Support Vector Machine (SVM) Algorithm is a supervised machine learning algorithm used for classification and regression.

It works by finding the best separating boundary (hyperplane) between data points of different classes.

- The algorithm looks for the hyperplane that maximises the margin — the distance between the boundary and the closest data points (called support vectors).
- Because of this, SVM is more effective when classes are well-separated.
- With the help of the kernel trick, SVM can also classify data that is not linearly separable by mapping it into a higher-dimensional space.

Using SVM vapor pattern matching

Used for classifying live vapor patterns captured by the sensor array and compare them to expert-defined cooking profiles. The AI programming board:

1. Extract features from the vapor signals (O_2, NH, VOCs, organics) and perform the necessary preprocessing steps to prepare the features (data) for use in SVM model.
2. Trains the SVM with labeled data from expert profiles (each class = a cooking profile).
3. During real-time operation, the live vapor signal is processed into features and fed to the trained SVM.
4. The SVM then decides which cooking profile the current signal matches and triggers the appropriate microwave power adjustment.

Applications

- Flowable product processing
- Real-time recipe automation and repeatability
- Quality assurance in food manufacturing environments

Benefits?

- Make processes more science-based and reduce guesswork
- Improves repeatability
- Mimics expert operators
- Produces consistent products

Conclusions: Accurate control of process temperature by electromagnetic waves, be it at microwave or other frequencies is opening the door to new process control ideas. AI algorithms can interpret data from process vapors and adjust microwave input to control process temperature. The combination can produce consistent products with reduced human intervention. Ultimately, more consistent products and more efficient processes will benefit producers and consumers.

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wavetekprocess.com/

AI for a sustainable industry: From data silos to connected intelligence

Martin Prinz,
CEO, coac GmbH

Editorial summary
Artificial intelligence is no longer an experimental add-on; it is fast becoming the foundation of industrial progress. In 2025, Boston Consulting Group identifies about 5% of companies worldwide as future-built organisations that have developed the critical capabilities to leverage AI. Not only for efficiency but for innovation and business reinvention. These 5% of companies are outperforming the competition and creating value by making better decisions with the support of AI (BCG, 2025). These frontrunners enjoy revenue growth up to five times greater than peers who remain in pilot or scaling phases. For most companies, closing this AI value gap swiftly is crucial. Engaging specialised AI partners is often the key to accelerating capability-building, ensuring AI initiatives move beyond pilots to deliver substantial, sustainable returns. For the chemical and lubricants industries, AI is also an opportunity to transforms compliance and sustainability obligations into new business models and growth accelerators - if organisations identify circular economies and sustainable industry as an opportunity. What once were static data silos are now evolving into "connected intelligences," enabling real-time collaboration and smart supply chain operations.

A new intelligence layer for the chemical and lubricant industries
For decades, the sector's information flows (formulation data, safety information, and regulatory files) remained trapped in isolated systems and PDF documents. Today, the best-performing organisations are integrating AI-driven software solutions that merge these fragments into smart business processes. Although many standards exist to help companies operate along the value chain, significant gaps remain, and regulation is a hurdle. Especially for the chemical industry. To address these challenges, companies are increasingly adopting AI approaches that not only enhance operational speed and compliance but also drive business growth.
By leveraging digital solutions such as AI, digital twins, and blockchain, organisations can monitor low-carbon products more efficiently across the supply chain, uncover new value opportunities, and strengthen their competitive advantage in the transition to a sustainable economy (Deloitte, 2025). Future-oriented firms already plan a 26% rise in IT spending focused on automation, data quality, and model-based decision tools (BCG, 2025). These investments are laying the groundwork for scalable industrial intelligence.

From regulatory complexity to digital clarity

Europe's regulatory landscape (spanning REACH, CLP, Taxonomy, CSRD, and ESPR) demands precision and adaptability. Here, AI provides ideal assistance to support functional experts and teams to establish speed and standardisation. AI-driven compliance systems are helping European firms accelerating documentation and cross-referencing processes. The adoption of AI in sustainability reporting has raised from 11% to 28% within the last year. By combining centralised data architecture with networks of autonomous AI agents, companies could dramatically improve the efficiency, responsiveness, and scalability of their sustainability reporting (PwC, 2025). As a result, compliance evolves from a linear business process to a continuous feedback process: a "living system" of data integrity and traceability. AI-driven compliance systems are helping European firms to rethink their future business models quickly and substitute hazardous ingredients.

The rise of connected compliance ecosystems

The European Union's Digital Product Passport initiative is accelerating this transformation. Early European Digital Product Passport pilots show significant reductions in documentation inconsistencies and cross-border traceability errors. DPPs promise substantial long-term benefits, including improved supply chain transparency, risk management, compliance facilitation, market efficiency, new digital business models, enhanced product quality communication, and support for sustainable consumption. The success of the DPP initiative depends on developing cross-sector, practicable implementation solutions based on global data standards to accommodate diverse company capacities and avoid fragmentation (Intereconomics, 2025). These passports enable every product, from a lubricant to a polymer, to carry an intelligent identity that updates dynamically as regulations or suppliers change. As data is the input for AI applications and smart data processing, the DPPs have gained an even more important role for future supply chains and intelligent data usage inside organisations and by consumers. The key challenge for a faster transformation is the ongoing process of regulation and the time-consuming execution. Today there are still no standards clearly defined and available. The global chemical market is expected to more than double, with a total increase of 112.0%, growing at a compound annual growth rate (CAGR) of 7.8% from 2025 to 2035. Over this time frame, the market size is projected to nearly double (about 2.1 times its current value), driven by stricter environmental regulations, increased demand for sustainable products, and heightened focus on reducing carbon emissions and embracing circular economy principles (FMI, 2025). The increasing prevalence of the European Digital Product Passport (DPP) is significantly driving the transformation of the chemical industry: Stricter transparency and sustainability requirements imposed by the DPP promote innovation and create new market opportunities, which account for a significant share of global growth in the chemical market. The DPP is thus not only increasing regulatory pressure but also becoming a key driver of sustainable market growth and the international shift toward circular products.

Towards a transparent and resilient supply chain

As transparency becomes a market differentiator, companies are reimagining operational trust. Around 80% of manufacturers now report improved traceability through AI-enabled data sharing and predictive tools (McKinsey, 2025). Investors' expectations reinforce this urgency, over half of global consumers prefer environmentally responsible products, and 70% actively choose options built on recyclable materials (PwC, 2025). Industrial data spaces such as Chem-X and Catena-X serve as the backbone of this shift, giving supply chains a common, auditable language for sustainability data (KPMG, 2025). Safety is one of AI's most compelling industrial applications. Predictive analytics in plant operations has reduced incident rates up to 20% in high-risk chemical production (Deloitte, 2025). Machine learning now assists in reviewing thousands of Safety Data Sheets (SDS), cross-checking classifications, and inferring missing hazard labels. Integrated into dynamic systems, such intelligence turns safety management into a proactive discipline rooted in continuous improvement.

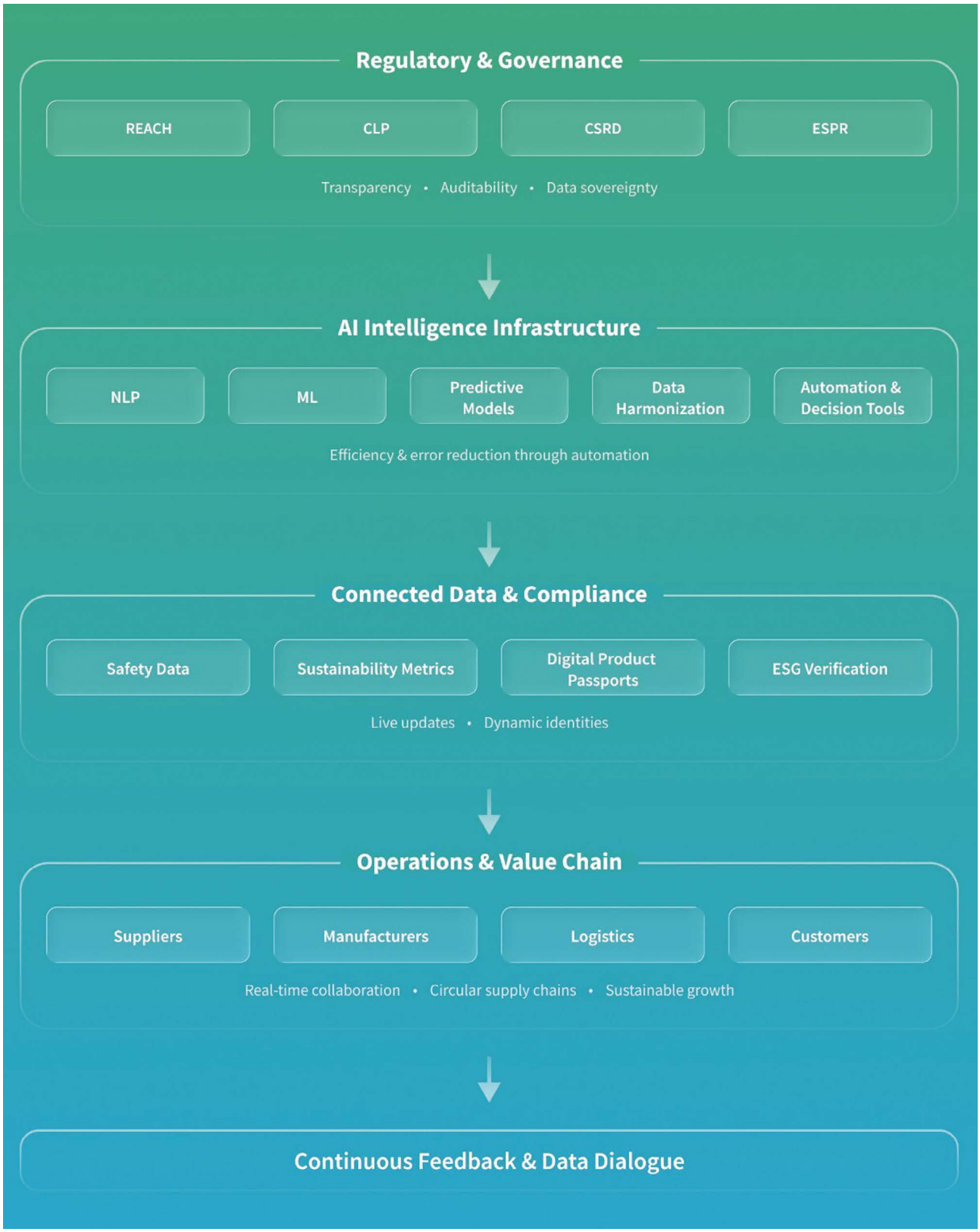
A European model for industrial AI

Europe is leading the way in responsible industrial AI on a global scale. The phased enforcement of the EU Artificial Intelligence Act between 2025 and 2027 is prompting manufacturers to place importance on transparency, auditability, and data sovereignty in the development and implementation of AI technologies (McKinsey, 2025). Future-built companies allocate 64% more IT resources to AI compared to late

adopters, developing explainable and traceable models that strengthen regulatory trust (BCG, 2025). This framework ensures that innovation remains anchored in European ethical and legal standards, AI that act transparently.

From documentation to dialogue

Regulatory data is becoming conversational. Instead of one-way submissions, AI-enabled systems now verify supplier declarations, check sustainability metrics, and trigger live updates downstream. In this connected environment, compliance becomes communication, an active dialogue across organisations - from upstream



to midstream to downstream. This cross-functionality accelerates innovation cycles and fosters systemic trust across industrial ecosystems (Oliver Wyman, 2025).

Challenges on the road

Ahead AI's impact is clear, but execution is uneven. Around 70% of executives identify data integration and trust as the top barriers to adoption (Deloitte, 2025). The chemical sector still ranks among the least digitally mature industries worldwide, leaving potential unexploited in both AI and process automation (Roland Berger, 2025). Bridging these gaps requires more than algorithms: It demands cross-disciplinary expertise combining data science, regulatory knowledge, and chemical engineering.

The opportunity: Compliance as a catalyst for innovation

Forward-looking leaders now view compliance as a catalyst for strategic innovation. Over half of European chemical CEOs identify AI-driven transparency as their top growth enabler for 2025 (McKinsey, 2025). When compliance, sustainability, and performance data converge, they form the basis for faster innovation cycles, greener formulations, stronger market trust, and higher growth rates. It is a fundamental redefinition of regulatory value.

Conclusion: Intelligent transparency for a sustainable industry

The global chemical AI market is projected to grow at nearly 19% CAGR through 2030 as companies converge on digital, sustainable transformation strategies (McKinsey, 2025). Organisations adopting responsible AI, anchored in explainability and governed data, will not only ensure compliance but define industrial leadership for the next decade. Intelligent transparency is the bridge: linking safety, sustainability, and profitability in one connected, adaptive future (Oliver Wyman, 2025). Software tools, like the ones from coac GmbH, offer the industry the tools they need to transform and build a better future for their organisation, our environment and our societies.

Final note: This article integrates verified 2025 industry insights from BCG, Business Insider, Deloitte, FMI, Intereconomics, KPMG, McKinsey, Oliver Wyman, PwC, and Roland Berger.

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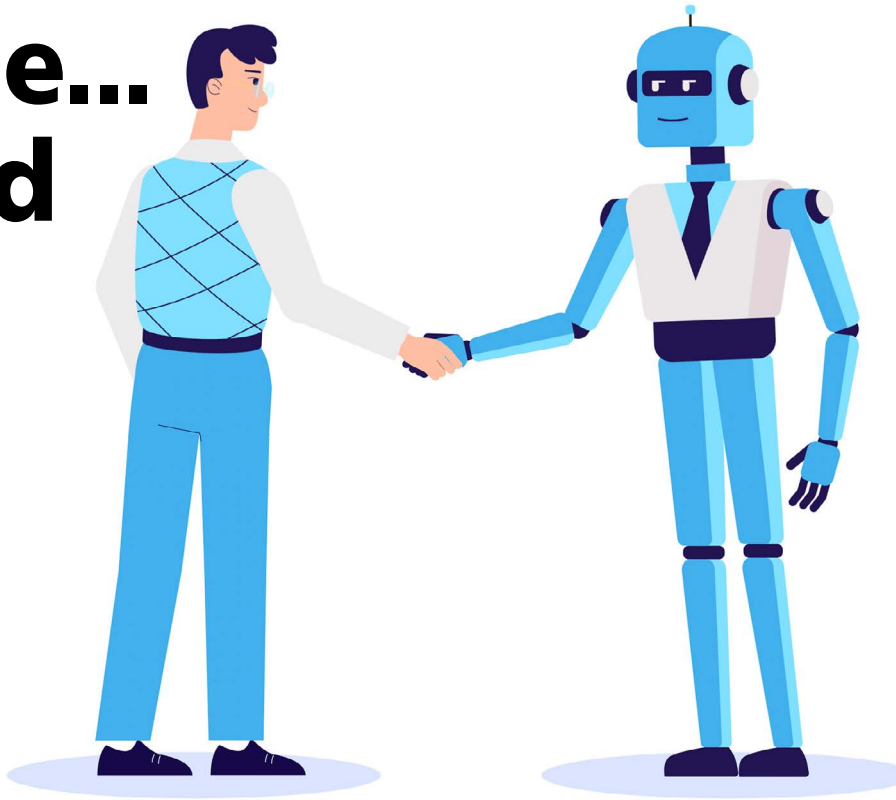
AI doesn't need to replace lubricants salespeople... But it could make us better



Rob Taylor,
Plan Grow Do

Artificial Intelligence is everywhere in the conversation at the moment. For many, it carries the fear of being replaced, of becoming less relevant in the eyes of buyers. For others, it promises efficiency and scale. The truth for those of us working in lubricants sales and marketing probably sits somewhere in between. AI will not take your role, but colleagues who use it well might just get ahead of you.

In an industry where time is short, content creation feels like a constant uphill battle, and buyers already expect answers before you have spoken to them, the potential of AI is worth exploring. The opportunity is not to replace the human connection but to use AI to support it.

Buyers are solving their own problems

The Buyer Revolution research makes it clear. Ninety three percent of lubricant buyers now use search engines as their first point of research, and three quarters already know what they want before ever engaging a sales person. Buyers are taking control of their decision making and are looking for evidence of reputation, value and fit before they even reach out.

For sales and marketing, this creates a clear challenge. Time is tight, and many teams struggle to know what to create or when to share it. Silence is not an option, but generic brochures no longer cut through. This is where AI can help. It can summarise large amounts of data, suggest content ideas, and reduce the time spent producing first drafts of material. The key is that it still needs sales knowledge and buyer empathy to guide it. AI can lighten the load, but it cannot define the story on its own.

Speed and relevance matter

When buyers do reach out, they expect immediacy. The research shows that in urgent cases, a response within three hours is now the benchmark. Over

80% of buyers say that speed of response is very or extremely crucial when they need assistance. They are impatient not because they are unreasonable, but because they already know their options.

AI can support sales teams here too. It can help draft responses, structure proposals, or provide a quick outline for a follow-up. It can make being responsive easier without adding to the workload. The balance, however, is crucial. A fast but hollow reply risks trust and credibility. The opportunity is in responding quickly with something that is relevant and thoughtful, where the human professional adds the context and reassurance that AI cannot.

People still matter more than brands

Despite all the talk of automation, the Buyer Revolution research shows that people still come first. Seventy six percent of buyers say personal connection is more important than corporate messaging. They value insight that speaks directly to their situation. No machine can replicate empathy, listening or the ability to understand unspoken frustrations.

AI can, however, help salespeople be better prepared for those moments of human connection. It can suggest personalised talking points, bring forward relevant insights, or help shape messaging that feels tailored. Used in this way, AI is invisible in the background, freeing the sales professional to lead with empathy and trust. Used badly, by pushing out generic, copy-and-paste articles, it risks destroying credibility. The difference lies in intent.

The modern account manager

The account manager remains as relevant as ever, but the expectation has shifted. Buyers say they want more value-adding relationships, not just cheaper deals. In fact, "doing it cheaper" ranked lowest, while product and application knowledge ranked highest. At the same time, over 80% of buyers said they were frustrated when account managers arrived unprepared.

Here is where AI can be an enabler. It can surface industry news, compile account data, or prepare sharper questions before a meeting. Think of it as a junior assistant in the background, not the finished article. The role of the account manager is to interpret, empathise and advise. AI simply ensures they arrive better prepared. The future is not about AI replacing salespeople, but about salespeople who use AI being seen as more valuable in the eyes of their customers.

Don't skip the steps

It is tempting to see AI as the silver bullet, the tool that will fix everything overnight. But the reality in our sector is that many organisations are still at the early stages of digital adoption. There is often no clear permission for sales teams to use digital tools, no defined strategy for how digital fits into the wider sales process, and no structure to measure success. Without those foundations, AI risks becoming another distraction rather than a driver of progress. The message is simple: get the basics right first. Build the digital building blocks, and then layer AI on top to make those processes faster, smarter and more effective.

A balanced way forward

The conversation around AI in lubricants sales and marketing should not be about fear, nor should it be about blind enthusiasm. It should be about balance. AI is a tool that can help overcome real blockers: lack of time, the struggle to create meaningful content, the pressure to respond quickly, and the need to prepare thoroughly.

But AI used badly risks adding to the noise that your buyers already face. The winners might be those who use it to create space for what buyers still value most: speed, relevance, and genuine human connection. This is not a question of AI versus people. It is about people who use AI with purpose, to show up better in the moments that matter most.

Note: Data referenced from The Buyer Revolution research focussing on the input of lubricant buyers.

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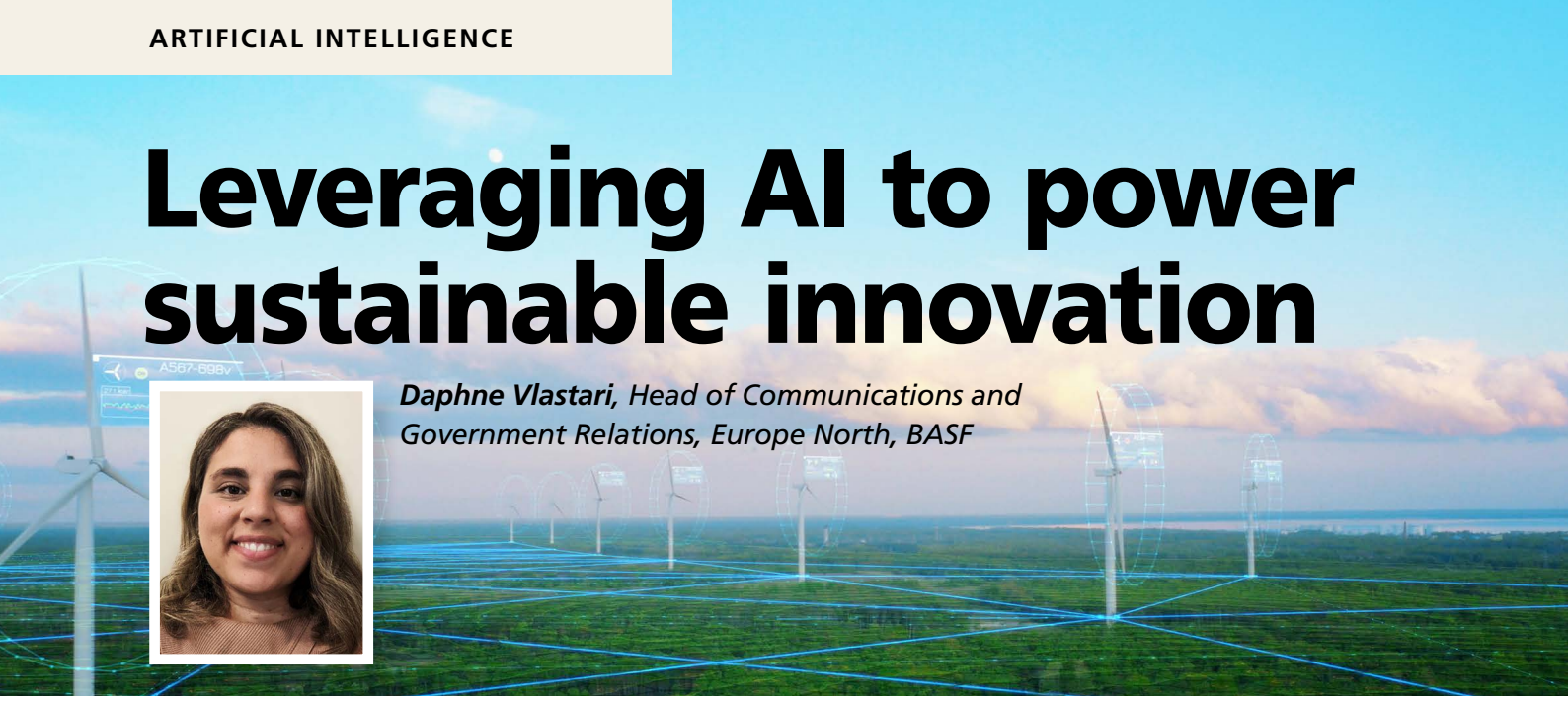
Leveraging AI to power sustainable innovation



Daphne Vlastari, *Head of Communications and Government Relations, Europe North, BASF*

Artificial intelligence (AI) is no longer an experimental addon for industry — at BASF, one of the world's largest chemical companies, it is a strategic accelerator for creating value at scale. AI is being deployed across the company to boost productivity, accelerate innovation and improve safety, while creating new pathways to more sustainable chemistry.

For more than a decade, BASF has invested in machine learning and AI capabilities, building digital hubs worldwide that combine domain experts with data scientists, cloud and software engineers, and specialists in image analysis, forecasting and natural language processing. This cross-disciplinary capability allows BASF to pilot fast, scale what works, and embed AI into everyday business functions — from production and procurement to sales, marketing and, crucially, research and development.

Bringing AI into R&D

In R&D, AI and machine learning are now considered a core part of the scientist's toolkit: they can be applied in the prediction of new molecules and materials and their properties, in the evaluation of image data and texts, or in the automation of research laboratories.

Machine learning models accelerate the identification of promising molecules and materials by predicting properties and prioritising candidates for laboratory testing. Image and text analytics speed the extraction of insights from microscopy, spectroscopy and scientific literature. Combined with laboratory automation and high throughput experimentation, these tools dramatically shorten iteration cycles and increase the probability of success for new formulations and catalysts.

At BASF we aim to harness and translate the latest AI developments into tangible solutions that optimise our value chains and accelerate innovation. Our approach is pragmatic: we focus first on clear value cases, confirm benefits through rapid pilots, and then scale successful solutions across divisions. For example, generative AI and knowledge retrieval systems such as QKnows AI are already helping R&D teams find internal reports and external literature more efficiently, reducing duplication and speeding decision making.

Recognising that fundamental advances often come from collaboration, BASF is also strongly engaged in collaboration with various academic institutions in the field of AI such as the Technical University of Berlin, MIT, KU Leuven, Imperial College London, McMaster University and the University of Waterloo.

For example, through our partnership with Imperial College London, we have jointly developed a new algorithm that could boost chemical R&D. Setting up a new production line requires experiments to find the best processing conditions (temperatures, reactants, etc.), but these tests are slow and costly, so there is a need to find optimal settings in as few experiments as possible. Bayesian optimisation is a machine learning method that recommends which conditions to try next by balancing improvements near known good settings with riskier, uncertain tests that might yield better results. However, traditional Bayesian optimisation doesn't fit chemical R&D practices—chemists often

run quick, approximate experiments alongside slower, more accurate ones. BASF and Imperial researchers developed machine learning models that bridge this gap and better accommodate the particular experimental practices used in chemical R&D. The innovative nature of this research won the prestigious Computers & Chemical Engineering (CACE) Best Paper Award 2023.

Another example where innovative R&D using AI and machine learning is Flue2Chem, a first-of-its kind collaboration to design and validate a UK value chain to convert valuable industrial carbon emissions (both fossil and non-fossil) into sustainable materials for consumer products. BASF was proud to be part of this consortium of organisations and as part of this work, was able to demonstrate how captured CO_2 can be converted to ethanol - a versatile building block used in surfactants, cosmetics, pharmaceuticals and industrial applications.

At BASF's global R&D hub in Ludwigshafen, researchers developed a new catalyst for turning captured CO_2 and hydrogen into ethanol. AI and machine learning were central to this effort. BASF optimised the catalytic conversion process to produce ethanol more sustainably and effectively. By integrating cutting-edge research and development techniques, along with AI and machine learning, we have accelerated the development of new catalysts. This innovative process enables us to conduct multiple tests simultaneously while using predictive models to improve the material properties of the catalysts more efficiently. The catalysts were also tested under standard processing conditions to reflect how they would perform in real-world conditions. This is a critically important aspect of the work of Flue2Chem, as we need to embed these innovations into existing chemical value and supply chains, so they have greater potential to be scaled up quickly and efficiently. The ethanol was then further processed by Flue2Chem partners to make surfactants which will be used to make consumer goods.

Looking ahead

Our experience at BASF demonstrates that from accelerating molecule discovery to improving plant reliability, optimising procurement, and enabling new more sustainable production processes, AI reduces time-to-market and strengthens resilience. In other words, done in the right way, AI can deliver both commercial advantage and sustainability outcomes. The challenge ahead is to ensure that new AI developments can be translated into the real world, for example, embedding them in the chemical production processes of the future. This will require sustained efforts from researchers, across companies like BASF and academic institutions, but also the right regulatory and funding environment to trial and test these in pilots and beyond.

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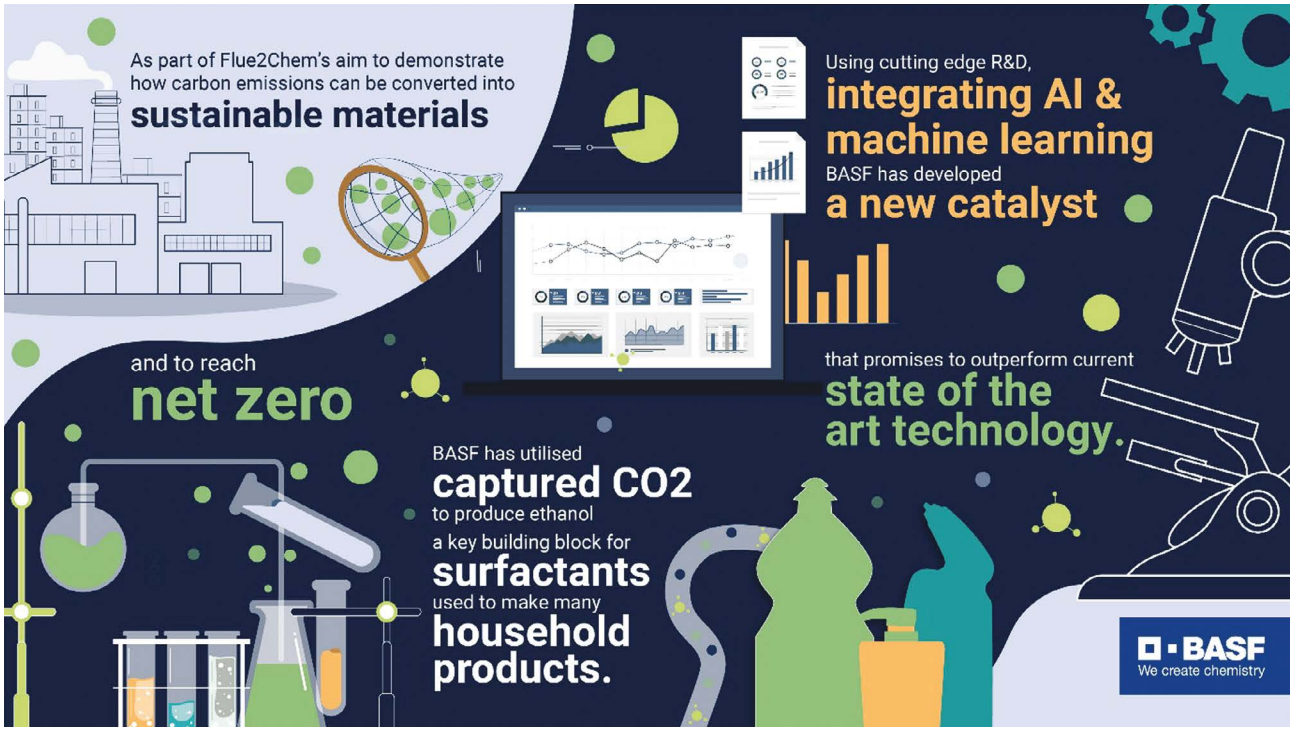

Figure 1: *Snapshot overview of BASF's contribution to the Flue2Chem project. For more information about Flue2Chem, please visit* ***https://www.soci.org/flue2chem***

From curiosity to capability: Embracing AI with intent and integrity

***Colin Morton**, Specialty Chemicals Industry Consultant*

Artificial intelligence has passed the point of curiosity in the lubricants industry. It is no longer a distant horizon or a technology reserved for the boldest outliers. AI is increasingly emerging as a credible capability, embedded in software tools, influencing workflows, and reshaping how we think about value, efficiency and innovation.

This special edition of Lube Magazine could not be more timely. As the sector stands at an inflection point, this issue aims to help make sense of the opportunities, responsibilities, and real-world lessons emerging from early AI adoption.

We must recognise what this moment represents: a chance not only to integrate powerful new tools, but to reimagine how we work, compete and lead.

A transformational moment - if we choose it

AI's recent breakthrough, especially in generative and agentic capabilities, are frequently described in terms of scale and acceleration. However, the most profound changes may come not from speed, but from direction.

When a system can interpret, create, design, and plan, it doesn't just automate existing tasks - it enables entirely new possibilities. Tasks once dismissed as too complex, expensive, or time-intensive can now be approached with fresh ambition.

Within the lubricants value chain, this could mean:

- **Predictive maintenance** powered by real-time data and anomaly detection.
- **Accelerated formulation development** through AI-assisted modelling and simulation.
- **Process optimisation** that learns and adapts continuously.
- **Enhanced technical services** through intelligent documentation and solution engines.
- **Smarter supply chains** with dynamic demand forecasting and inventory control.
- **Marketing and insight generation** from AI-analysed trends and customer signals that reveal hidden opportunities.

These are not theoretical use cases - they are fast becoming practical advantages. The companies that invest in their understanding and application today may be better placed to navigate the market forces of tomorrow.

Trust, tools and turning points
Yet for all the promise, there remains a broad spectrum of attitudes toward AI across our industry. Some are already piloting tools and building in-house expertise. Others remain cautious - unconvinced of reliability, ethical alignment, or strategic fit.

This is understandable. AI is complex. It raises serious questions about data governance, intellectual property, security, and organisational readiness. For many, it still feels intangible or too far removed from daily operations.

But here's the reality: the tools are already arriving. AI is being integrated into ERP systems, laboratory tools, CRM platforms, and quality control software. Even without "building AI," companies are starting to use it - often without knowing.

What's needed now is not just more tech, but more intent.

Intent to experiment.
Intent to learn.
Intent to lead responsibly.

From automation to augmentation
One of the most important mindset shifts is to stop thinking of AI solely in terms of automation - doing the same thing, faster and cheaper - and start thinking in terms of augmentation.

As noted in my recent UKLA conference presentation, generative AI is about more than productivity gains. It unlocks new dimensions of creativity, insight, and problem-solving. And now, with the rise of agentic AI, we are moving into systems that can reason, plan, and act - with increasing levels of autonomy.

This shift presents new opportunities across technical and commercial functions:
- In R&D, AI can generate and evaluate thousands of molecular structures in seconds.
- In customer support, agents can interact with service histories and technical bulletins to generate tailored recommendations.
- In operations, workflows can be designed to run adaptively with minimal human intervention - and maximum traceability.

But none of this replaces the role of human professionals. On the contrary, it makes their expertise even more vital. AI is not an excuse to reduce human input. It is an invitation to amplify it - through critical thinking, ethical judgment, and domain-specific insight.

Integrity is not optional
As the technology advances, the conversation around ethics, bias, transparency, and unintended consequences becomes even more pressing. From responsible data handling to explainable outputs, the lubricants industry, like all sectors, must ensure that innovation does not come at the cost of integrity.

Some of the key guardrails to consider:
- Data privacy and protection, especially for customer, formulation, and supply chain data.
- Transparent use policies, so employees understand how and when AI is being applied.
- Bias mitigation, to ensure outputs are fair and reflective of diverse data inputs.
- Oversight mechanisms, to validate AI-generated recommendations before implementation.
- Clear accountability, so responsibility does not become diffused between systems and people.

Ethical leadership is not just about compliance. It's about earning and sustaining trust; from employees, customers, regulators, and the public. It starts with clear intent and open dialogue.

Building capability at every level
If AI is to become a real capability, not just a buzzword, then it must be embedded in organisational culture. That means moving beyond isolated experiments to widespread literacy and strategic alignment.

This is not solely a technology function. It is a whole-business effort. From the boardroom to the lab bench, from supply chain managers to sales teams, AI understanding must be cultivated, not assumed.

Key steps to consider:
- Upskilling and education - formal and informal training to build baseline knowledge.
- Pilot projects - low-risk experiments that demonstrate value and build confidence.
- Cross-functional collaboration - tech and business teams working together to design meaningful applications.

- **Partnerships** - with vendors, universities, and AI providers to access expertise and stay at the forefront.
- **Strategic integration** - aligning AI investments with broader sustainability, growth, and innovation goals.

Companies that treat AI as a core competence, rather than an outsourced solution, will be far better equipped to adapt, differentiate, and lead.

Sector-specific realities

The lubricants industry, of course, is not the same as retail, banking, or media. We deal with specialised materials, regulatory constraints, a sophisticated value chain with complex B2B relationships, and long product development cycles.

But that's exactly why AI holds so much promise here.

It can help bridge knowledge gaps, accelerate time-to-insight, and support more sustainable practices; from emissions reduction to life cycle analysis and circular economy modelling.

In an era of tightening margins and changing customer expectations, the ability to operate smarter, not just harder, may just prove to be the key competitive advantage.

This edition: a mirror and a map

This special edition brings together diverse voices - early adopters, cautious observers, technical experts, and strategic thinkers - to reflect where we are and where we're headed.

The readership survey results offer a mirror to the sector's current sentiment: curiosity is high, but trust and clarity still need work. Meanwhile, the case studies demonstrate that real results are possible - when AI is applied with discipline, creativity, and a willingness to learn.

This is not about hype. It's about helping people see themselves in the AI story, and supporting them to move forward with confidence.

A future worth shaping

As we look ahead, one thing is clear: AI is not a passing trend. It provides a new layer of capability that will be baked into the next generation of tools, systems, and strategies.

The question is not whether to engage, but how.

With intent.
With integrity.
With the belief that the best answers come from people and technology working together, not in competition, but in concert.

To those already exploring: keep going.
To those still uncertain: start small, but start.
To the industry as a whole: let's shape this future with ambition and accountability.

There has never been a better time to turn curiosity into capability.

Colin Morton is an independent consultant with over 25 years international experience in the specialty chemicals industry in both technical and commercial roles. Contact: ***colinjhmorton@gmail.com***

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Disclosure: ChatGPT was applied in the writing of this article.

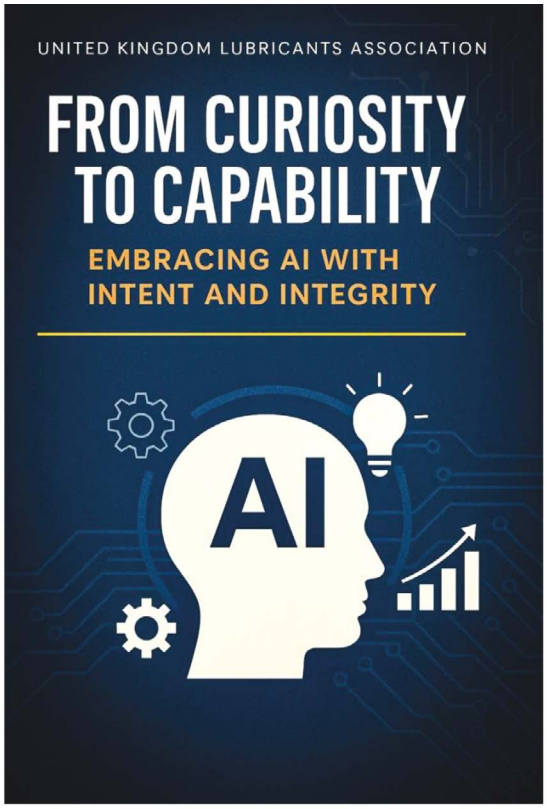
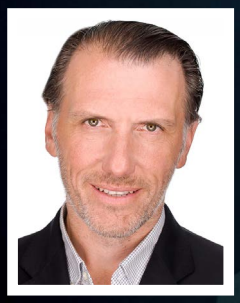


Image created through OpenAI with DALL•E 3

How Otodata uses AI to revolutionise lubricant logistics



Guy Lanrezac,
General Manager,
Otodata Europe

In an industry where precision, uptime, and supply continuity are paramount, Otodata is redefining lubricant distribution through the power of artificial intelligence. As the world's largest tank monitoring solution provider, Otodata brings cutting-edge AI capabilities to lubricant suppliers, distributors, and end users, delivering smarter operations and measurable impact. With over three million monitors deployed worldwide, Otodata's systems continuously feed live data into intelligent platforms, strengthening algorithms and enabling customers to move from reactive to predictive operations.

Predictive inventory management

Lubricant distributors have long faced the challenge of balancing inventory against unpredictable demand. Overstocking ties up capital, while shortages risk costly downtime for industrial customers. Otodata's AI-powered remote tank monitoring systems solve this dilemma by providing real-time visibility into lubricant levels, consumption patterns, and refill cycles.

By analyzing historical usage data alongside environmental and operational factors, Otodata's algorithms can:

- Predict critical lows and consumption spikes before they happen
- Trigger automated alerts for refills, preventing costly runouts
- Optimise purchasing decisions by forecasting demand more accurately

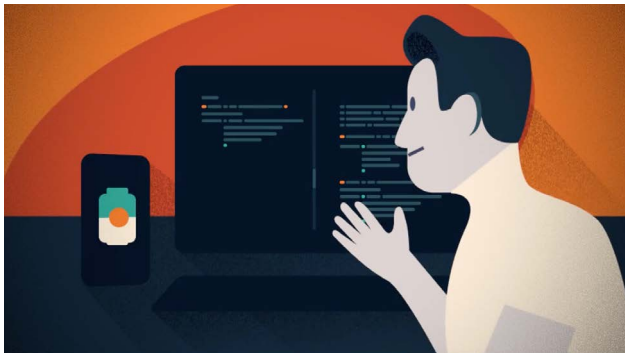
This predictive capability eliminates guesswork and manual tracking. Distributors can plan deliveries with confidence, reduce emergency dispatches, and ensure that customers never face unexpected shortages.

Smarter logistics and route optimisation

Beyond inventory, logistics is where AI delivers transformative value. Lubricant distribution often involves complex fleets, compartmentalised trucks carrying multiple blends, and customers spread across diverse geographies. Otodata's systems help streamline these operations by:

- Identifying the most efficient delivery routes based on tank levels, geography, and urgency
- Reducing fuel costs and carbon emissions through optimised scheduling
- Minimising inventory holding costs by aligning supply with actual demand

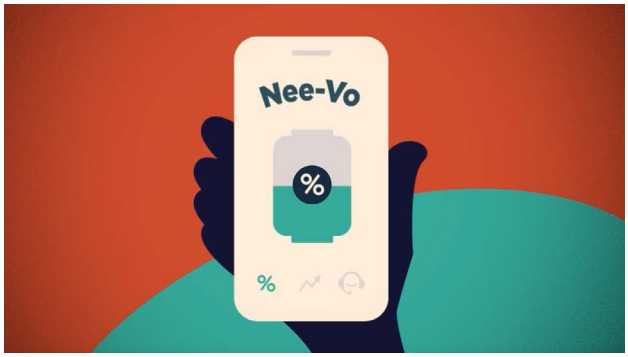
For sectors reliant on engine oils, gear oils, and process lubricants, where downtime can be unpredictable and expensive, these efficiencies translate directly into customer satisfaction and competitive advantage. AI ensures that every truck compartment is filled optimally, every route is planned intelligently, and every delivery is executed with precision.



The Nee-Vo portal Intelligence at your fingertips

Otodata's online portal and White Labeled branded app, Nee-Vo, is the digital nerve centre of its AI ecosystem. Customers gain access to actionable insights at their fingertips, including:

- Daily inventory reports and consumption analytics
- Tank fill tracking with time and volume data
- Predictive metrics such as Days to Order (DTO) and Days to Empty (DTE), which estimate when tanks will require refills
- Integration with ERP and ordering platforms, paving the way for automated lubricant replenishment



Included in the standard offering is the Nee-Vo app which, provides the basic functions of daily inventory reports and consumption analytics, and tank fill tracking.

"The Nee-Vo app is where data becomes intelligence," says Guy Lanrezac, Otodata General Manager for Europe. "By giving customers predictive insights like 'days to empty', we help them move from reactive ordering to automated replenishment—saving time, money, and stress."

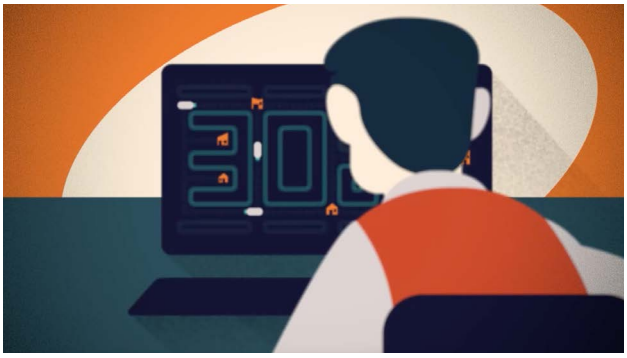
Hardware-as-a-Service (HaaS): Removing barriers to adoption

To accelerate adoption, Otodata offers a Hardware-as-a-Service (HaaS) program that removes upfront investment barriers. Customers pay a monthly fee for access to data and insights, enabling scalable deployment of AI-powered monitoring across lubricant tanks without heavy capital expenditure. This model democratises access to advanced technology, ensuring that even smaller distributors can benefit from predictive analytics and remote monitoring.

Sustainability and operational excellence

AI is not only about efficiency, it's also about sustainability. Otodata's solutions contribute to greener operations by:

- Reducing waste and overstocking, ensuring lubricants are produced, stored, and delivered only when needed
- Improving delivery efficiency, lowering emissions through optimised routing
- Supporting renewable alternatives such as bio-based lubricants



By aligning lubricant logistics with sustainability goals, Otodata helps customers reduce their environmental footprint while maintaining operational excellence. This dual focus on efficiency and responsibility positions Otodata as a partner for the future of energy and industrial supply chains.

Strengthening algorithms through scale

Otodata's advantage lies in scale. With over three million monitors deployed globally, the company collects vast amounts of live data every day. This data feeds directly into its AI systems, strengthening algorithms and improving predictive accuracy. The more data the system ingests, the smarter it becomes, creating a virtuous cycle of continuous improvement.

Customer benefits: From reactive to predictive

The ultimate measure of success is customer impact. By leveraging Otodata's AI-driven solutions, lubricant distributors and suppliers achieve:

- Reduced emergency deliveries and associated costs
- Improved customer satisfaction through uninterrupted supply
- Enhanced asset protection, including theft detection for applications like used cooking oil (UCO)
- Data-driven decision-making, enabling smarter purchasing and operational strategies

"Every monitored tank strengthens our algorithms," adds Lanrezac. "That scale means our customers benefit from insights that grow sharper every day, helping them anticipate needs, reduce costs, and deliver exceptional service."

The Future Outlook: AI as a strategic enabler

As the lubricant industry evolves, the role of AI will only grow. Rising demand for synthetic and high-performance lubricants, increasing complexity in supply chains, and heightened sustainability expectations all point toward a future where data-driven intelligence is indispensable.

Otodata is poised to lead this transformation. By combining IoT-enabled monitoring, predictive analytics, and seamless digital integration, the company delivers solutions that are scalable, sustainable, and customer-centric. From optimising truck compartments to predicting tank runouts, Otodata's AI ensures that lubricant logistics are not just efficient, but revolutionary.

Conclusion

Lubricants are the lifeblood of modern industry, reducing friction, preventing wear, and extending the life of equipment across automotive, industrial, and energy sectors. Ensuring their availability is critical, and Otodata's AI-powered solutions make that possible with unprecedented precision. By optimising inventory, streamlining logistics, and enhancing customer satisfaction, Otodata is redefining what it means to be a technology leader in the lubricant industry.

For distributors, suppliers, and end users, the message is clear: with Otodata, lubricant logistics are no longer reactive, they are predictive, intelligent, and future-ready.

www.otodata.eu

LUBE: The European Lubricants Industry Magazine – is the Official Journal of UEIL, the European Lubricants Industry Association. LUBE is published 6 times per year providing news and developments for the Lubricant Manufacturers, End-users and Suppliers. LUBE is the registered trade mark of United Kingdom Lubricants Association Ltd (UKLA).

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Publisher: UKLA United Kingdom Lubricants Association

Editorial Team:
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Printer: The MANSON Group Limited,
Cloud publishing platform: YUDU

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