# AI integration transforming print and packaging industries



The landscape of business technology is undergoing significant transformation, particularly within the **print and packaging industries**, where **artificial intelligence (AI)** is increasingly becoming essential. A recent analysis by Adam Page, VP of Reports at Smithers, highlights emerging trends and applications of AI as outlined in their latest research report titled “Post-drupa Technology Forecast for Print and Printed Packaging to 2034.” This report is currently available for purchase.

The narrative begins with the rapid evolution of AI technologies beginning with the public's introduction to **ChatGPT** in 2023, which ushered in a wave of predictive AI capabilities. The subsequent year saw the dawn of **generative AI**, giving users tools to create diverse forms of content including video, graphics, and music while enhancing conversational capacities. By 2025, the phase of **agentic AI** is anticipated to emerge, enabling more sophisticated autonomous problem-solving. Notably, agentic AI boasts enhanced reasoning skills, reducing the occurrence of inaccuracies—commonly referred to in earlier iterations as “hallucinations.”

AI is already deeply integrated into the operational frameworks of modern print and packaging businesses, performing a variety of tasks ranging from project estimation to real-time management of production processes. Its application extends to **autonomous machinery**, which utilizes output feedback to facilitate informed decision-making in management. The ongoing **digitization** of the printing industry is a critical factor that is fostering the broader adoption of AI technologies.

Smithers' comprehensive research, which includes extensive interviews across the value chain, identifies transformative applications for AI within the printing and packaging sectors. A detailed overview of these implications is presented in the Smithers white paper titled “5 Ways Generative AI Will Transform Packaging by 2030.”

As the demand for **speed to market** escalates due to a rise in consumer personalization, shorter production runs, and a plethora of channels, brands, retailers, and suppliers confront immense pressure. Generative AI, while still facing challenges in understanding basic packaging terminologies, is evolving rapidly to assist in expediting product launches. Innovations in AI are enabling brands to gain deeper insights from comprehensive consumer research, enhancing their ability to tailor products to meet specific regional or micro preferences.

AI's influence spans beyond design; it holds promise for combining with **digital printing capabilities** to facilitate swift adaptations and scalable solutions. Brands are now looking to create tailored designs to cater to both retail and e-commerce environments, each with differing consumer engagement strategies. In addition, the design of supporting promotional materials is adapting to become more dynamic and responsive to consumer expectations.

Behind the scenes, AI is streamlining processes, aiding in **stock management** to efficiently fulfil orders within 24 hours, and minimising packaging materials used for shipments. The automation of packaging processes is being further enhanced by AI, optimizing tasks such as palletization and stacking through advanced robotic applications.

Moreover, AI is proving beneficial in **demand forecasting** and risk management, paving the way for dynamic negotiations with suppliers and forging cooperative partnerships amongst brands to improve logistics efficiency. The ongoing development of **human-like conversational engines** is expected to impact the print and packaging industries significantly.

**Software and automation** remain pivotal to AI implementation, with the upcoming **drupa 2024** event anticipated to be a landmark for software advancements. Smithers identifies that six out of the ten most substantial developments anticipated from this exhibition are directly related to software innovations.

As the print and packaging supply chains become increasingly interconnected, reliance on sophisticated software to manage orders, artwork production, and logistics is set to amplify. Over the past few drupas, software has transitioned from merely enhancing productivity to becoming integral in digitizing entire operations.

The breadth of AI applications in this sector is extensive and, while challenges persist, it is clear that the technology is poised to redefine business practices over the next decade. Smithers continues to collaborate with industry stakeholders to assess the disruptive potential of these technologies, as it becomes evident that the journey toward AI integration in print and packaging is just beginning.

Source: [Noah Wire Services](https://www.noahwire.com)

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