The Four Trends Set to Disrupt Highly Regulated Industries in 2023

Bob Tilling, VP Global Sales at Kallik identifies four trends set to disrupt manufacturers in highly regulated industries in 2023: the industrial metaverse, the need to get a tighter arm on cybersecurity, the rise of eco-anxiety as the 2025 sustainable packing deadline looms, and a focus on data centricity.

Businesses and manufacturers in highly regulated markets, in particular pharmaceutical, food and beverage, cosmetics and consumer packaged goods (CPG), have experienced huge change in recent years, most significantly in the technologies they use, the regulations they face, and the changing demands from their customers.

In 2023 these macro level changes are going to have a serious impact on regulated industries – with technology-driven change exploiting the industrial metaverse right down to the packaging, labelling and artwork used when manufacturing each individual product.

1. The Industrial Metaverse Will Blur Digital and Physical Like Never Before

The global metaverse market is set to grow at an annual compound rate of 39.8% between 2022–2030. As part of the wider metaverse umbrella, the industrial metaverse combines a mix of immersive technologies including physical-digital fusion and human augmentation to create digital representations of a physical environment. Early adopters are already seeing benefits in terms of streamlining logistics and processes, achieving tangible return on investment (ROI), and delivering high-quality products across multiple industrial applications.

Many companies are still trying to envision the future of the industrial metaverse, but its potential to transform design, manufacturing, and interactions across global ecosystems is gaining significant interest. We have already seen the introduction of digital twins during Industry 4.0, a virtual model designed to accurately represent a physical object. When supported by other innovative technologies such as artificial intelligence (AI), Internet of Things (IoT) and 3D rendering, the true powers of digital twins can be felt and the road to the full impact of the industrial metaverse becomes nearer.

In conjunction with digital twins, we can expect to see the use of 3D rendering rapidly increase in 2023. 3D rendering is the process of using a computer to generate a 2D image from a digital three-dimensional scene. In fact, 3D rendering for artwork and labelling is already a core industry focus – helping to generate labels or artwork to put on the product and produce a 360-degree view of what it will look like before it goes to market.

2. Get to Grips with Cybersecurity – Put Data at the Heart of Operations

Sophisticated hackers are increasingly finding ways through business security defences, so cybersecurity will become a clear focus in 2023. In the UK, nearly two-fifths of businesses experienced a cyberattack in the year leading up to July 2022. For the healthcare sector, cyberattacks have been a long standing issue – it received 20% of the UK's cyberattacks in 2021. Its vast amount of personal data combined with a reliance on outdated, legacy technology has made the healthcare market a sought-after target and unfortunately, medical devices have become an easy entry point for attackers. Medical device manufacturers are on the front line and must integrate an effective cybersecurity plan throughout the entire product development lifecycle, from pre-market and post-market phases, to device disposal.

Prevention all comes down to data management – companies stand a much higher chance of warning off unwelcomed attackers by putting data at the core of operations. This applies right down to access control for critical recipes and formulas in the manufacturing supply chain – and that includes the label and artwork management (LAM) solution, where security is of upmost importance. LAM solutions are accessed by multiple parties across the manufacturing and distribution process, so product owners need to hold one single source of truth and be able to be sure there is no unwanted data sharing. They must ensure that not only users of the platform are only able to see information relevant to them, but also that out-of-date files are prohibited to reduce risk. Users must only be able to view and edit one version of a label that will need rigorous approvals thereafter. This will provide the necessary reassurance that a consistent audit trail has been followed and minimises the likelihood of data leakage, businesses can be confident that attackers are unable to edit or share data without access or permission.

3. The Rise of "Eco-anxiety" – Sustainable Packaging Remains at the Front of Consumer Minds

Environmental, social and governance (ESG) may be no new phenomenon, but it is one that requires urgent action as pressure mounts daily from investors and an eco-conscious society. In 2023, this focus isn't going to die down – organisations can even expect to lose their competitive edge or market share if ESG is not taken seriously. In a recent report by Kantar, 97% of consumers globally reported that they are prepared to take action and live a more sustainable life, with another 79% keen to purchase more sustainable products.

Most recently, microplastics have found themselves under the microscope – every minute, over seven kilos of microplastics from cosmetics and personal care products end up in the European environment. The cosmetics industry is at the forefront of this issue, as 87% of products from the ten bestselling cosmetics brands contain microplastics. The growing issue has sparked major interest – and consumers have called upon EU regulators to action new laws against the use of microplastics. If approved, the restrictions will have huge implications for manufacturers, not only to product composition but to a major uphaul of existing labels to reflect the ingredients change. Editing such a sheer number of labels will need an advanced and sophisticated LAM (Label & Artwork Management) solution to match – a LAM solution that can manage vast amounts of data, symbols, words, and phrases on a large scale.

Exacerbating these pressures is the real and unavoidable 2025 deadline for sustainable packaging. Although market challenges such as cost of living increases and supply chain shortages will wreak havoc for organisations, up to 70% of consumers are willing to pay more for products with sustainable packaging. It will require business leaders to rethink both operations and timeframes, including the use of sustainable materials, and how this will affect printing operations. Here, technology will once again prove its value, reducing long manufacturing development lifecycles and waste in label and artwork management processes by easily allowing adaptability to fit new packaging sizes and types. LAM solutions help companies reduce labelling and artwork completion times by 50%, and many major consumer goods companies are already undergoing the migration from plastic packaging to cardboard packaging in 2023.

4. Become a Data-centric Business – Growth and Success on Scale will Follow

Finally, in 2023, more organisations will realise the true power of data when analysed and used at scale. Despite investment of trillions of dollars by U.S. companies into data analytics integration at scale, up to now only 8% of organisations are capturing real value. From a labelling and artwork management perspective, effectively harnessing data can unlock a whole host of opportunities, and help prepare for changes in regulations, product updates, and react in the event of product recalls.

In the artwork and labelling space, being able to react to changing market conditions will be pivotal to stay compliant and operational – and companies must invest in a data heavy system, capable of examining, storing, and printing mass amounts of data, quickly. Take the postponed UKCA certification deadline. By end of year 2024, companies must have changed all labels to reflect the new UKCA marking to remain compliant. Or consider the move to sustainable packaging highlighted earlier, where companies will need to alter recycling symbols for each product based on the material type, regional recycling regulations, as well as the storage and recycling instructions for every region and every language – each of these will need an LAM solution to change speedily, safely and at scale.

Analysing data at scale and actioning cross-organisational change across thousands of product lines will be a long, arduous, and error-prone task with a manual or paper system. It is simply impossible now to adapt to change and to grow without the help technology.

With bespoke LAM software, companies can reduce artwork changes down to five minutes – a 55-minute saving per change compared to other solutions. LAM databases and rules engine functions keep products and predetermined phrases stored in 30-40 different languages, to allow users to quickly search and find the relevant data that can be used for artwork – saving time and risk of human error. While many large companies have been found to pass artwork and labelling tasks on to outbound agencies, LAM software can provide huge savings on third-party artwork agency fees for manufacturers.

The proof is in the Numbers – Make Sure you Follow them in 2023

Despite previous years being filled with uncertainty, there is still much externally enforced change for manufacturers in highly regulated markets in 2023 – whether it be the rise of the industrial metaverse, preparing for upcoming regulations, tightening cybersecurity defences or an increased focused on ESG. This will give rise to an increased reliance on digital LAM solutions to ensure product packaging and labelling keeps pace with these developments.

For all manufacturers but in particular for those businesses in regulated industries, the label may be the last part of the production cycle, but it will be one of first parts to cause regulatory issues and even impact consumer safety.

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