How Automation, AI, and Data Integration are Transforming the Pharmaceutical Industry

Pharma companies are more challenged than ever to bring drugs to market safely and cost-effectively. Roadblocks to success include the ever-evolving regulatory environment, growing patient safety concerns, and the burden of outdated technology solutions. Today many businesses find themselves burdened with rigid and costly compliance processes. Furthermore, there is a schism between organizations and the critical insights they need to manage their regulatory, safety, and reporting data.

Organizations must adopt more integrated, automated solutions to align safety and regulatory compliance with solving critical business challenges. There are four critical trends pharma and med-tech organizations are embracing related to digital transformation.

Trend #1: Automation is vital to the success of the pharma industry

Companies are dealing with a growing influx of changes when it comes to monitoring drug and device safety and the management of regulatory information reporting to government agencies. More data is coming in from more sources, more products are distributed in more countries, and there are continually changing reporting requirements, each of which has a cascading impact on other parts of the organization.

In 2020, we will see artificial intelligence (AI), machine learning (ML), and natural language processing (NLP) fuel intelligent automation of safety to ensure a more timely and cost-efficient approach. For example, by deploying AI-powered safety and PV solutions, organizations will be able to collect, organize, and analyze data from diverse sources (like emails, social media, audio files, etc.) to help ensure clinical trials are safe, cost-effective and compliant.

Trend #2: Data volumes and complexities are exploding exponentially, requiring a retooling of the workforce

Pharma once feared automation but, now, companies are turning to technology for solutions. Similar to other industries, automation will not eliminate jobs; instead, it will enable them. The 2018 World Economic Forum's Future of Jobs report predicts 58 million new jobs will be created by 2022. Expect to see job roles transition from data

processing to Data Science within the pharma and med-tech industries, in both safety and regulatory functions.

Technology will be essential to help humans process the enormous amounts of data that need to be gathered, sorted, and translated when it comes to safety and regulatory compliance. Human involvement is not going away anytime soon – however, automation with AI, ML, and NLP can help people sift through the voluminous amounts of data more quickly and efficiently – freeing up time and resources for companies to invest in improvements and innovations instead of non-value-added repetitive tasks.

Trend #3: More patient-centric data will be available from more disparate sources

Data — where it will come from (data sources) and how it will arrive (data delivery) — will continue to evolve and expand, and the industry must adapt to handle this increased volume from disparate sources. For example, data is now available from wearables and patient-centric direct reporting. From a med-tech perspective, this could represent a new paradigm for safety and regulatory compliance. The result will lead to improved engagement between patients and healthcare professionals and help transform healthcare in the digital era.

The trend of data coming from non-traditional channels such as social media, online support networks, and other digital channels will also multiply. As patients share information in new ways, technology will be essential to understand both the content and context related to treatments, disease progression, adverse reactions, etc. Capturing and analyzing this data is critical for adverse event monitoring to detect any patterns early and quickly.

Trend #4: Data will need to be accessible easily – and visually

Data must be readily available and digestible for signal detection and for monitoring risks and benefits in real-time, especially for small to mid-sized pharma businesses. User-friendly data access and the use of data visualization tools will be essential. Data analysts will need to be able to query the data to answer their most challenging questions and have the results delivered in a visually rich format.

Large pharma companies with massive datasets will need to ensure their systems have the scale and capacity to manage their legacy and future data. Likewise, small to mid-sized pharma companies will need to have systems that are manageable for smaller teams, can integrate with external sources, and can scale and grow with the company.

Conclusion

Looking ahead to 2020 and beyond, pharma and med-tech companies will lean more heavily into intelligent automation for PV/safety compliance and regulatory information management. Powered by AI, ML, and NLP, companies of all sizes will be able to leverage these capabilities and have the ability to focus more of their resources on research, development, and innovation to support business growth and most importantly, to improve patient safety.

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