

AI Solution for Pharmacovigilance

Life Sciences & Healthcare



The global pharmacovigilance (PV) industry is facing huge challenges in processing the increasing volumes of data being generated by the ecosystem. Varied sources such as journals, patents, articles, social media, as well as managing increasing number of non-standardized data sources are contributing to an annual exponential rise in data volumes. However, several life sciences organizations still use legacy technology systems or manual processes for information management, which are prone to errors and significantly hamper productivity. As a result, PV companies are seeking robust technology tools that can help streamline their cluttered data, address scalability issues and minimize human dependence in processes.

Tata Consultancy Services' (TCS') AI Solution for Pharmacovigilance creates a disruptive change, enabling life sciences organization to shift from being compliance-centric to taking complete ownership of patient safety. It enables 10X efficiency by leveraging technology, data mining and fostering partnerships. This pluggable cognitive automation solution provides simplified processes, improved quality, better compliance and lower cost of case processing.

Overview

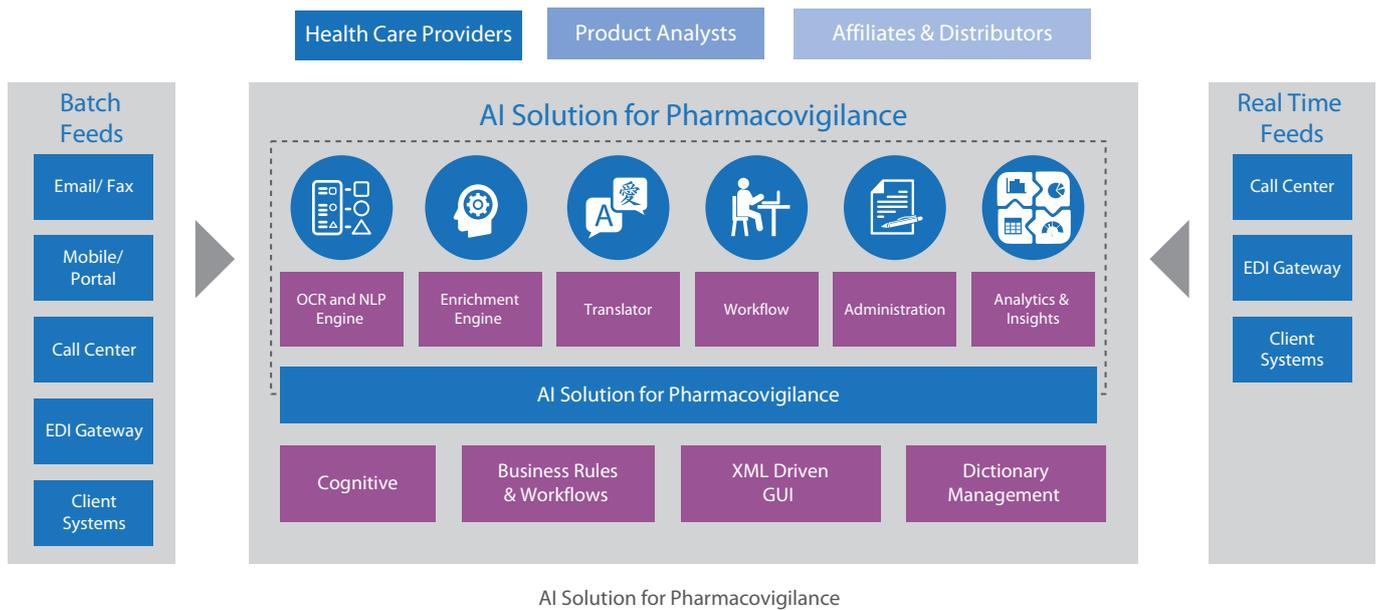
The technology challenges faced by Life Sciences companies are multifold. Firstly, IT infrastructure that spans multiple products, vendors and agencies, is increasing in complexity. As the inflow of unstructured, case related information rises, life sciences organizations struggle to normalize new data. Furthermore, non-standardized inputs contribute to possible delay and danger to patient safety. To effectively address these challenges, organizations require an advanced cognitive solution with the capacity to handle large and complex datasets.

AI Solution for Pharmacovigilance employs machine learning and artificial intelligence to solve industry problems with cognitive automation. It enables ingesting a variety of structured and unstructured data formats, advanced OCR/ICR, robust and feature rich NLP (Natural Language Processing) engine, ushering reinforced learning, and advanced analytics that support schema less storage with highly interactive and real time visualization.

Our Solution

TCS' AI Solution for Pharmacovigilance comprises the following features:

- **Artificial Intelligence for cognitive automation:** Leverages ontologies such as automated curation pipelines that help build an encyclopedia of biological concepts from multiple sources. The engine also facilitates supervised learning with adequate datasets to construct hypotheses that enable machine centric decision making, based on correlation of entities.
- **Data enrichment and decision making:** Provides dictionary assistance for coding, product identification, medical dictionary terms, and decisions key to PV, such as case validity, priority and seriousness.
- **Data extraction:** Assimilates information from diverse file formats including XML, DocX and PDF. Utilizes OCR/ICR to enable intelligent reading of images with embedded text. Employs a robust NLP engine for named-entity recognition.
- **Dictionary Assistance:** Provides dictionary assistance for spelling, product identification, medical dictionary terms, and other fields specific to PV, such as drug, reaction, patient history, and so on.
- **Output generation:** Ensures that incoming data is standardized and the final output is available for integration with safety databases and other external systems with out of box support for E2B standards.
- **Analytics & Workflow:** Enables in-place browser based, real-time analytics with a cutting edge rich visualization framework.



Benefits

Organizations can experience the following benefits with TCS' AI Solution for Pharmacovigilance:



Superior PV data: Enhance the accuracy and quality of PV data with standardized inputs, and automated case intake and processing.



Enhanced productivity: Reduce the human effort and time involved in data processing with automation, which facilitates a significant dip in cycle times due to expedited workflows.



Higher ROI: Increase the ROI of your technology investment with a scalable solution that can handle large volumes of varied data formats.

The TCS Advantage

By partnering with TCS, life sciences companies can leverage the following differentiators:

- **Domain Expertise:** Experienced and certified subject matter experts leverage their deep understanding of pharmacovigilance services relating to data capture, medical review, quality management, aggregate reporting, and signal detections among others, to chart out the road map for AI Solution for Pharmacovigilance.
- **Expertise in cognitive Intelligence:** Life sciences enterprises can capitalize on the cognitive automation solution to boost efficiency and overall quality of pharmacovigilance results.
- **Foundation Roadmap :** The solution lays a roadmap for use cases within and beyond pharmacovigilance, including landscape analysis, real world evidence, enterprise knowledge management and quantitative sciences.
- **Scalable solution:** Life Sciences companies can leverage the AI Solution for Pharmacovigilance to improve efficiency and quality of PV results. The solution is supported by TCS' various data centers that are compliant with relevant PV-related regulations worldwide.

Awards & Recognitions



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Visit [Life Sciences & Healthcare](#) page on www.tcs.com
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About Tata Consultancy Services Ltd (TCS)

Tata Consultancy Services is an IT services, consulting and business solutions organization that delivers real results to global business, ensuring a level of certainty no other firm can match. TCS offers a consulting-led, integrated portfolio of IT and IT-enabled infrastructure, engineering and assurance services. This is delivered through its unique Global Network Delivery Model™, recognized as the benchmark of excellence in software development. A part of the Tata Group, India's largest industrial conglomerate, TCS has a global footprint and is listed on the National Stock Exchange and Bombay Stock Exchange in India.

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IT Services Business Solutions Consulting

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