ITC INFOTECH

Business-friendly Solutions

Whitepaper

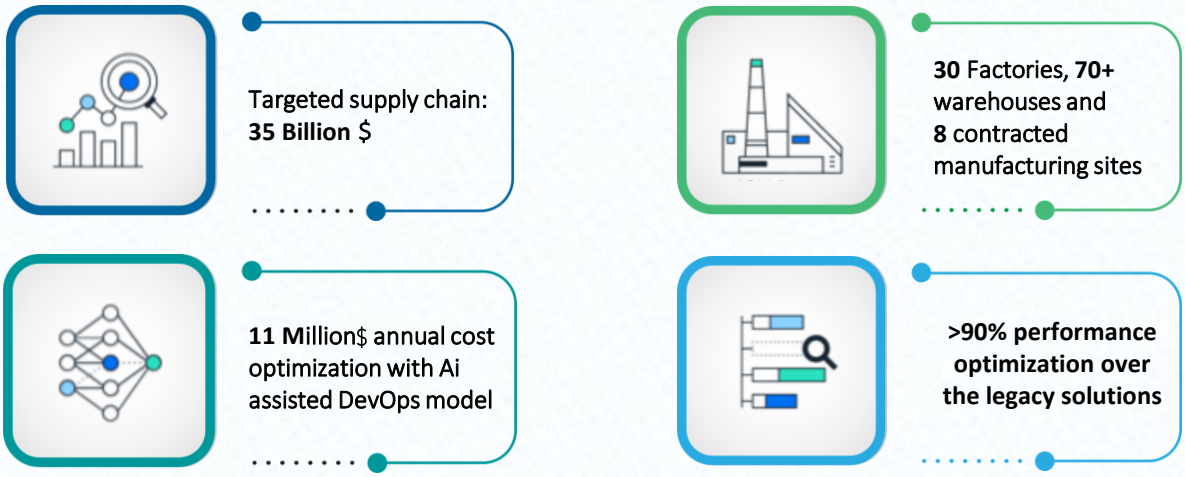
Transforming Traceability in Regulated Markets:

How ITC Infotech's In-House Innovations are Powering Global Compliance

The rise of globalization has led to the development of robust global supply chains spanning a wide range of products—from low-value agricultural commodities to high-value diamonds, from perishable goods to intellectual property. However, unregistered, unregulated, and untrusted products pose risks at every stage, from source to consumer. To combat the threat of parallel supply chains, three key factors—Authenticity, Traceability, and Supervision—become essential. Whether it's Indian mangoes, African diamonds, or German cars, ensuring that consumers pay for genuine products is of critical importance.

Certain industries have a higher need for traceability, either due to regulatory mandates to fight the threat of counterfeit products—as seen in Consumer Packaged Goods (CPG), Pharmaceuticals, Mining, and Explosives—or due to operational necessity, as in the Automotive and Aerospace sectors, where tracking critical spare parts is essential. However, multinational regulations and complex global supply chains make traceability increasingly difficult. Traditional ERP systems are no longer capable of managing the intricate data requirements of these industries. As regulatory demands continue to evolve, no single ERP system can fully address the traceability needs across all sectors, underscoring the scale of this ongoing challenge.

Navigating Complexity: Tackling the Scale and Scope of the challenge



[Highlight of the overall solution and value delivered]

New tobacco regulations have become a norm over the past few years, and new tobacco regulations in large end markets like Europe and China posed a critical business challenge for one of ITC Infotech's customer, a global manufacturing leader in the CPG domain. ITC Infotech initiated a project to implement a track-and-trace system for the customer's global supply chain worth 35 billion USD, and ITC Infotech was entrusted to design and deliver the solution. Compliance with these regulations required the development of a platform capable of integrating with the company's existing Manufacturing Execution (ME) and Manufacturing Operations Management (MOM) systems. Additionally, it needed to synchronize with warehouse management systems, connect with government servers for regulatory reporting, and provide mobile access for end users across 70+ warehouses and 30+ manufacturing sites worldwide. Also, this highlighted a golden opportunity to optimize the operational expenses for the legacy traceability solution with a potential cost reduction of $8 million per annum (75%).

However, due to the scale and complexity of its operations, no single platform met all the requirements. Instead of searching for a perfect fit, the team adopted a strategic approach—selecting a platform that met approximately 30% of its needs and then scaling it up as a foundation for a tailored solution. This led to the adoption of **SAP Advanced Track and Trace for Pharmaceuticals (SAP ATTP).**

While SAP ATTP is designed primarily for the pharmaceutical industry and offers a strong foundation for serialization and compliance, its adoption for the CPG industry requires extensive customizations. Re-platforming was not just a technical upgrade but an opportunity to modernize, optimize, and future-proof the company's serialization processes. By leveraging **SAP ATTP** as a base, the solution was customized to support Manufacturing Execution, Logistics Execution, and Trade, while ensuring seamless integration with third-party logistics providers, manufacturing partners, and regulatory systems.

Delivering a Scalable Solution

There were two key aspects of the business where scalability was crucial. First, onboarding new legislation and ensuring compliance with evolving serialization laws across multiple countries. Second, onboarding new sites and seamlessly integrating manufacturing sites, including contract manufacturers, external vendors, and warehouse platforms.

One of SAP ATTP's biggest strengths is its extensive network of integration partners, enabling smooth communication across various systems. The customer's manufacturing execution platforms (MES/MOM) were built on Apriso, a Dassault Systèmes platform, while their code management system was custom-developed to integrate seamlessly with both code-issuing authorities and **SAP ATTP.** The customized traceability solution built on SAP ATTP successfully demonstrated several key capabilities:

Seamless SAP Integration	Cross-Platform Compatibility	Serialization System Interoperability	Regulatory Compliance
ATTP integrates effortlessly with SAP systems such as ECC, S/4HANA, WM, EWM, and cloud-based solutions like SAP CPI, SAP Fiori, and SAP BTP.	ATTP supports integration with non-SAP systems and adheres to GS1 communication standards out of the box.	With minimal customization, ATTP can integrate with other serialization platforms like TraceLink and Optel, ensuring fast and reliable inter-company data exchange.	ATTP connects with government and third-party regulatory systems, including the FDA, EU FMD, and CFDA, ensuring compliance across global markets.

This interconnected framework not only streamlined data exchange but also proved the scalability of SAP ATTP for diverse operational needs. The designed platform's flexibility and robust architecture ensured these integrations are smooth and minimally disruptive to ongoing operations.

More importantly, it highlighted a broader opportunity—demonstrating that a robust traceability solution can be built for any industry. The key lies in understanding the business and its core processes to design an adaptable and future-ready solution.

Continuous Evolution: Beyond Deployment

A product is never static. As the SAP ATTP-based traceability solution rolled out across multiple countries, real-world feedback played a crucial role in driving continuous improvements. A structured performance enhancement initiative followed each deployment, significantly optimizing efficiency by eliminating outdated and redundant implementations.

Addressing Global Challenges

Operating on a global scale introduced unique challenges, one of which was language barriers. Government authorities and end-users reported responses to ATTP in their local languages, creating a potential communication gap. While customizing ATTP to support special characters was considered, a more efficient solution was found—integrating Google Translate. This demonstrated that not every complex challenge requires an equally complex solution.

Enhancing Compliance and Monitoring

In a highly regulated environment, robust supervision systems are essential. To strengthen oversight, we developed comprehensive analytics reports, providing both high-level and detailed insights into ATTP's performance for different stakeholders. Additionally, a customized error-handling interface was introduced, enabling business users to interpret SAP ATTP's technical logs and derive meaningful, business-specific insights.

Optimizing System Performance

Further collaboration with SAP led to enhancements in standard SAP methodologies, improving overall system efficiency. To manage vast amounts of regulatory data effectively, we implemented a data archival logic, reducing archival processing time by more than 90%. These improvements ensured the solution remained scalable, reliable, and adaptable to evolving business needs.

The $10M Breakthrough: Real-Time Stock Authentication at Scale

Compliance is only effective when end users embrace it. Ultimately, success depends on whether users adhere to the defined processes. In large-scale supply chains, handheld terminals are the backbone of logistics operations. To ensure widespread adoption, a scalable, cost-efficient, and robust solution is essential—not only for compliance but also to minimize rework after shipment, manage stock recalls, meet regulatory requirements, and control operating costs.

To deliver a seamless handheld terminal solution, we explored SAP Build, a low-code/no-code platform known for its intuitive UI/UX. This also provided an opportunity to integrate Gen AI capabilities into the SAP ecosystem, enhancing both design and development. The result was a device- and OS-agnostic mobile solution hosted on the cloud, seamlessly integrated with SAP WM/eWM and SAP ATTP-based traceability systems to support end-to-end logistics operations.

A critical breakthrough emerged when the team developed a module on this platform to capture and validate stock seizure details by government authorities. This innovation enabled legal teams on-site to verify stock authenticity and facilitate the release of seized goods—ultimately helping the customer save approximately $10 million annually.

Turning Challenges into Opportunities: A Scalable, AI-Powered Future

With growing team expertise in Gen AI capabilities, we introduced targeted learning initiatives, enabling tech leads to explore emerging technologies. This knowledge expansion led to proactive platform health monitoring and an AI-enabled alert mechanism by integrating New Relic, ServiceNow, and SAP BASIS. The solution was further expanded to include

This is significant considering it enabled us to deliver a 10% year-on-year reduction on operational expenses by the customer for application management.

Redefining Global Traceability: The Future

Global legislations are rapidly evolving beyond their formative structures and becoming stringent day by day in domains such as tobacco, food & beverage, automotive, aerospace, chemicals & explosives, and high-tech manufacturing. While large players like SAP are pushing ahead for enhanced adaptability of solutions like SAP ATTP across industries, small-scale and localized solutions targeted to cater to the specific needs of a particular supply chain will also be a game-changer in serialization, compliance, and counterfeit prevention.

The future of traceability will be shaped by AI-driven innovations that enhance efficiency and compliance. Predictive analytics will improve supply chain resilience by forecasting disruptions and optimizing inventory movements. AI-powered anomaly detection will proactively identify compliance risks, minimizing regulatory penalties. Machine learning integration will automate error resolution, enhance traceability data accuracy, and optimize system performance with minimal manual intervention. As industries demand self-optimizing, AI-powered supply chains, ITC Infotech is poised to go beyond serialization, becoming a central hub for AI-driven traceability and compliance. ITC Infotech's ability to combine automation, intelligence, and adaptability with the existing expertise on manufacturing domain understanding will drive next-generation supply chain transformation on a global scale. With a "business-friendly solutions" approach and a bias for action, ITC Infotech is ready to embrace this future—leveraging innovation to create agile, intelligent, and scalable solutions that redefine traceability and compliance for industries worldwide.

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About ITC Infotech

ITC Infotech is a leading global technology services and solutions provider, led by Business and Technology Consulting. ITC Infotech provides business-friendly solutions to help clients succeed and be future-ready, by seamlessly bringing together digital expertise, strong industry specific alliances and the unique ability to leverage deep domain expertise from ITC Group businesses. The company provides technology solutions and services to enterprises across industries such as Banking & Financial Services, Healthcare, Manufacturing, Consumer Goods, Travel and Hospitality, through a combination of traditional and newer business models, as a long-term sustainable partner.

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